

NARRATIVE
OF A VOYAGE TO THE
SOUTHERN ATLANTIC OCEAN,

IN THE YEARS 1828, 29, 30,

PERFORMED IN H. M. SLOOP CHANTICLEER,

UNDER THE COMMAND OF THE LATE

CAPTAIN HENRY FOSTER, F.R.S. &c.

BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

FROM THE PRIVATE JOURNAL OF

W. H. B. WEBSTER,

SURGEON OF THE SLOOP.

IN TWO VOLUMES.

VOL. I.



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PREFACE. Fos

THE peculiar objects of the Chanticleer's Voyage rendered it one of more than ordinary interest, and particularly desirable that a record of its general proceedings should be preserved. Had it not been for the melancholy event by which the expedition was deprived of its leader, there can be no doubt that a complete narrative of the voyage would long ago have been published. The present volumes have been drawn up from notes made with a scrupulous care.

The numerous observations resulting from the extraordinary exertions of Captain Foster, were placed by the Admiralty in the hands of men of science, who have done ample justice to

the merits of their Author: some of them have been given here, but their discussion, and the conclusions of these gentlemen, will be found in the transactions of the learned Societies to which they belong.

Besides this public testimony to the merits and high qualifications of Captain Foster, his admiring friends have erected a Monument to his memory in the sanctuary of his native village, Woodplumpton in Lancashire.

The monument consists of an Urn, from which the British flag hangs in negligent folds, and against which a sailor is leaning in the attitude of grief. An anchor and quadrant, and a few nautical and scientific instruments, are also introduced; and below the figure the following inscription is engraved in plain Roman capitals:

Sacred to the Memory of
HENRY FOSTER, R. N. F. R. S.
Distinguished as well for superiority of intellect
as urbanity of manners.
By a zealous and firm discharge of duty,
he gained the confidence and regard of his
brother officers, and by a successful
pursuit of knowledge attracted the
notice of men of science.

PREFACE.

For his philosophical experiments made in the Arctic regions, the Copley medal of the Royal Society was presented to him on the 30th November, 1827; when the Lord High Admiral of England, with an alacrity honourable to himself and to the subject of his patronage, instantly promoted him to the rank of Commander.

In the year following he sailed on a voyage of scientific research. He had completed his astronomical observations at Panama, and all things had prospered in his hand; when, proceeding to his ship, and anticipating a speedy return to his native shore, he fell from a canoe, and in a moment was lost to his country and his friends.

His body, shrouded in the British flag, was interred near to the fatal spot on the bank of the river Chagres, in the Gulf of Mexico, on the 5th of Feb. 1831, and in the 34th year of his age.

This monument was erected by several of his companions and friends, as a memorial of the high esteem they entertained for his character, and of the deep regret they felt for his untimely death. He was the son of the Rev. Henry Foster, Incumbent of this Chapelry.

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VOYAGE

IN

HIS MAJESTY'S SLOOP

CHANTICLEER.

CHAPTER I.

Appointed Surgeon of the Chanticleer. — Objects of the Voyage. — Commander Foster. — Equipments. — Frazer's Stove. — Departure from Spithead. — The Eddystone Lighthouse. — Detained at Falmouth. — Final departure. — Madeira. — Teneriffe. — Fry of the whale. — St. Antonio. — Dolphins in chase. — Various kinds of produce. — Sucking Fish. — Calms. — Touch at Fernando Noronha. — Abrolhos. — A suspicious Sail. — Arrive at Rio Janeiro.

ON the 14th December 1827 my appointment of surgeon summoned me to repair on board His Majesty's sloop Chanticleer, commanded by Captain Henry Foster, F.R.S. Having reached Portsmouth on the 29th, I found the vessel preparing for a voyage, the principal object of which was to ascertain the true figure of the earth, by a series of pendulum experiments at various places in the northern and southern

hemispheres. This method of solving a problem which still occupies the attention of scientific men, depends on the force of gravity at different parts of the earth's surface in producing a greater or less number of vibrations of the pendulum in a certain space of time, which is found to vary according to the distance of the place of observation from the earth's centre. From these observations the radius of the earth is obtained in various northern and southern latitudes, from which its figure is inferred by calculation. Another object contemplated in the present voyage, and one of the first importance in navigation, was to measure accurately the meridian distances by means of chronometers between the various places visited by the *Chanticleer*. Several other inquiries, relating to meteorology, the currents of the ocean, magnetism, and the usual detail connected with navigation, were combined with the foregoing, and served to render the voyage highly interesting to men of science.

The valuable experiments made by Captain Foster in the polar regions, while serving as astronomer with Sir Edward Parry, had obtained him the Copley medal of the Royal

Society ; and it was at the suggestion of the Council of this learned body that the present voyage was undertaken, and the care of it entrusted to Captain Foster by His Most Gracious Majesty, then Lord High Admiral.

In order to achieve the important objects above enumerated, which demanded a considerable range of scientific attainment, many instruments of the most expensive kind were supplied to Captain Foster. The ordinary mode of equipment was departed from at the dockyard in the internal arrangements of the vessel, and nothing was left undone which his experience, added to that of the first lieutenant, could suggest to render the *Chanticleer* in every respect fit to perform the extraordinary service on which she was about to be employed. By the express direction of His Royal Highness the Lord High Admiral, the same attention was paid to this as to the scientific department, and, when completed, the vessel presented a model which might justly be pointed out as a specimen of the skill and ingenuity of the age.

The *Chanticleer* was built in the year 1804, at the Isle of Wight, and was pierced for ten guns, her burthen being two hundred and

thirty-seven tons. For the present voyage two guns only were supplied, and she was rigged as a barque. The complement of the Chanticleer consisted of fifty-seven men, including fifteen officers and six marines.

The various equipments having been completed, and the instruments deposited on board, we left Portsmouth harbour on the 21st of April 1828, and on the following day the customary visit was paid to us by the Port Admiral, Sir Robert Stopford. This ceremony of visiting His Majesty's ships before they go to sea, and more particularly when preparing for a voyage like the present, forms an important part of the Port Admiral's duty. The object of it is to inspect the condition of the ship and her crew, the names of the latter being severally called over as they appear before him, and to ensure that the rating of each individual on the ship's books, according to which his pay is proportioned, shall be consistent with his merits. In addition to this, all classes on board, from the highest to the lowest, are brought under the immediate notice of their Commander-in-chief, a measure which is always attended with beneficial results. So complete

were the arrangements of the Chanticleer, and so much attention had been paid to them by Lieutenant Austin to whom the duty principally belonged, that the Admiral expressed himself well satisfied with the state of the vessel, and her efficiency formed the subject of a very favourable report to His Royal Highness the Lord High Admiral.

In the course of the voyage, Captain Foster was directed to make observations at sundry places in the Atlantic ocean near the equator, as well as in high southern latitudes, and these being of a nature to produce considerable delay, so as to prevent fresh provisions from being obtained, a large quantity of Donkin's preserved meat was supplied. Another acquisition deserves to be mentioned, as it proved of the utmost consequence in preserving the health of the crew in the cold and boisterous regions of South Shetland. This consisted in Frazer's stove, an article which has undergone a three years' trial on board the Chanticleer, and its good qualities have been the constant admiration of every one on board. The provisions were cooked by it in bad weather and in a boisterous sea equally as well as if the vessel

had been in harbour ; and although the hatches might be battened down, no inconvenience whatever was experienced from it, an advantage which can only be fully appreciated by those who are accustomed to small vessels. The consumption of coals which served for the culinary purposes of the whole crew for one day amounted only to one bushel. As its efficiency depends on its retaining a certain degree of heat, any wood that is of a soft nature is not calculated for it when coals cannot be obtained ; but we found the hard wood of tropical countries to answer perfectly well. The only objection which can be advanced against it is the wear of iron plates, and even this may be guarded against by taking spare ones. These plates are apt to crack and split, a fault which might perhaps be in some degree prevented by placing a bar of iron on them while in use. On the whole, Frazer's stove may be considered as a most valuable acquisition to a ship.

It was on the 27th of April that we commenced our voyage, in one of those delightful mornings of spring, when all nature is rejoicing and the heart is gladdened by the

cheering influence of a serene sky. The wind was light from the northward, not a cloud could be seen, and everything seemed auspicious to our voyage, while we silently glided from the vessels at Spithead. As we pursued our course down the Channel on the evening of the 30th of April, the Eddystone lighthouse was seen. In passing this solitary beacon, it is quite impossible to behold it without feelings of surprise and admiration. Distant nine miles from the nearest part of the coast of Devonshire, the rock on which it stands appears as if left by nature for the purpose to which the art of man has converted it. Firmly and proudly it stands amid the ocean's waves,

“Proof to the tempest's shock,”

at once the guide of the departing vessel, and the mariner who seeks to regain his native shore. The history of this lighthouse is well known. The first lighthouse was completed and lighted in the year 1698, and in 1703 it was swept away in a storm, with the architect who happened to be in it at the time superintending some repairs. The second (of wood) was completed in 1708, and in 1755 was destroyed by fire. The present superb edifice, which was

completed in 1759, being entirely composed of blocks of hewn stone and fastenings of massive iron, and put together under the direction of that celebrated engineer Smeaton, seems destined to resist the destructive violence of either element.

On the 1st of May we put into Falmouth, with the object of comparing the longitude as given by our chronometers with that determined by Dr. Tiarks, and to commence the chain of meridian distances at that place. The fine weather having afforded Captain Foster a good opportunity of complying with this part of his instructions, we attempted on the following morning to put to sea. A strong easterly wind made the sea run high, in consequence of which we broke our anchor. This unexpected event placed the vessel in danger, and obliged us to run for safety into Carrick roads, where we again anchored. Sailors are considered the most superstitious persons in the world, and those of the Chanticleer were certainly no exception. The accident was at once accounted for among them by our having attempted to sail on a *Friday*.

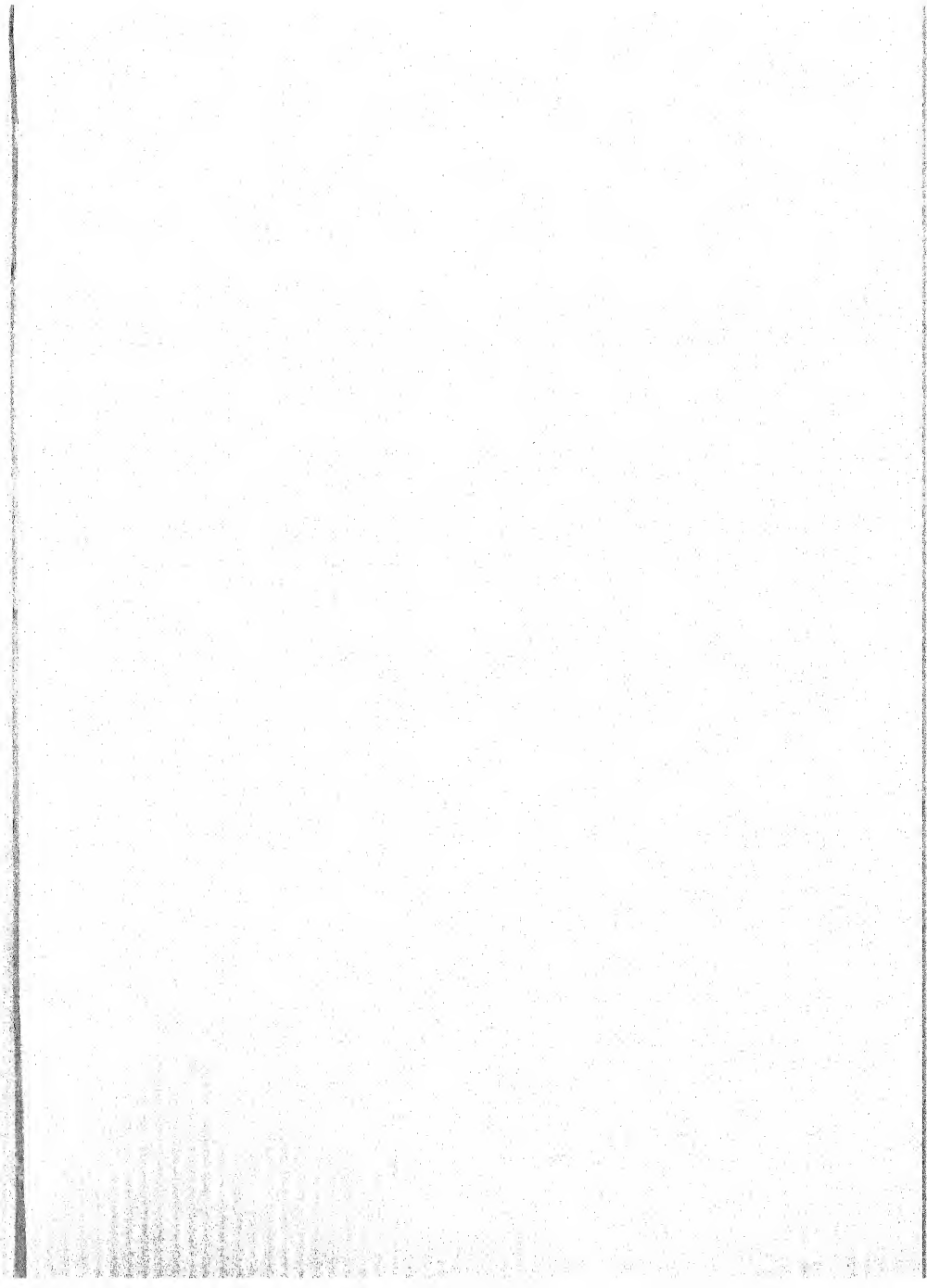
On the 3rd May, a fine favourable breeze

from the north-west enabled us to get to sea, and to make up for the delay occasioned by the misfortune of the previous day. We were soon outside of Falmouth pursuing our course to the southward. As our little vessel obeyed the impulse of her sails and darted swiftly through the water, the shores of our native land were less distinctly seen, and as they became mingled with the haze on the distant horizon, occasioned reflections which have fallen to the lot of many. Few and short are the moments for such reflections; the business of a ship is never done, and admits of little leisure for them; the sails, the course, the reckoning, and the weather demand incessant care, and the object of the voyage at length becomes the chief concern.

On Sunday May 10th, after an agreeable and pleasant passage, we saw the high land of Porto Santo, which at a distance appears to be a rocky barren island with rugged hills. It is thirty miles distant from Madeira, and is inhabited only by a few fishermen. In the afternoon we saw the Brazen Head, one of the headlands of Madeira. The lofty summit of this beautiful island, as usual, was enveloped in masses of dark clouds, the lower hills were half

concealed by haze, and as we skirted the rocky shore on our way to the anchorage off Funchal, no part of it presented any indication of that exuberant fertility that is naturally looked for in this land of vineyards. The island of Madeira has so often been the theme of panegyric, and described in such glowing colours by many persons who have visited it, that I had long dwelt in imagination on its beautiful scenery, and there was no place that I was more desirous of seeing. The "Paradise," and "Gem of the ocean," are names which have been lavished on Madeira; it is the usual portal to the tropics, and is generally visited by outward-bound ships, with a view to procure wine and refreshments.

Madeira has no good harbour; the anchorage in Funchal roads is open and exposed, and is considered by nautical men as very dangerous when the wind blows from the southward. The usual custom is to put to sea immediately on these occasions; but some of the old residents affirm that there is no danger in attempting to ride out a gale from this quarter, as it rarely continues long. It is said that no vessels with good ground tackle have





Kendall, R. N. del.

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J. Clark, fecit.

Teneriffe, 1. W. 30 Miles.

ever been lost by pursuing this plan, and that many in attempting to get away at the commencement of the gale have been driven on shore. Vessels of moderate size might anchor in safety under the Loo or Black-rock, where a small break-water might easily be formed. During the Chanticleer's stay at Madeira, the Duke of York steam-boat arrived from Lisbon, and made an excursion to the neighbouring island of Porto Santo. Many of the people of Funchal took the opportunity thus afforded them of visiting that island.

On the 17th May, our observations for the longitude of Funchal having been completed, we sailed for Teneriffe, and on the 19th we saw the celebrated peak of this island distant ninety miles. Great as this distance was, it is said to have been seen at one hundred and fifty miles; and its height would render it visible beyond this, if the atmosphere allowed.

The small town of Santa Cruz is situated on the south side of the island of Teneriffe, which at a distance presents a rugged and barren appearance. A series of elevated ridges and pointed peaks rise in succession above each other, with precipitous shelving sides divided

by deep fissures and ravines, forming altogether a most unequal surface of bare and sterile rocks with scarcely a sign of vegetation or a rill of water. Such was the appearance of the island as we approached the roadstead of Santa Cruz, where we anchored in the course of the forenoon of the 20th.

Although Santa Cruz is the principal seaport and capital of Teneriffe, the riches and fertility of the island are to be found at Oratava on the opposite side of it, where the wine is chiefly made and shipped when the weather allows. Santa Cruz is frequented by outward-bound ships for the purpose of obtaining a stock of wine, which can be procured at a cheaper rate and frequently of as good a quality as that of Madeira. At the time of our visit, the price of very good wine was 20*l.* the pipe of a hundred imperial gallons; this was called the 'London particular;' but the best old cargo wine is only 12*l.* the pipe, and in general cannot be distinguished from the ordinary wines of Madeira.

Santa Cruz has been often described: we met with much courtesy and civility, and were gratified by the attentions we received. The

market is well supplied ; but the town is rather badly off for water, which is conducted by a wooden aqueduct across valleys and hills to a fountain near the Plaza Real. The whole of the Canary islands are in possession of the Spaniards ; and the difference of costume between the people of Santa Cruz and those of Madeira is particularly striking to the visiter. The peasantry and poor class of the inhabitants appear to have very little to do, and are in a destitute condition, although better clad than those of Madeira. The dromedary is chiefly used as the beast of burden, and appears well adapted to the island.

We left Teneriffe on the 21st May, and were delayed by calms the two following days. On the morning of the 23rd, the surface of the sea was covered with very minute particles of something which appeared like dust or the shakings of hemp. Having obtained some of it in a vessel, on examination I found it to be composed of very small worms, extremely slender and delicate, and about the hundredth part of an inch in length. They were of a brown colour in general, and acuminate at each extremity, having also a slight bending

motion at times. Besides these, the water from which I had taken them contained a few hairy globules, about the size of a pin's head, which opened and contracted, having a bright glistening speck in their centre. There were besides these some little red capillary worms, bifurcated at one extremity, and some medusæ, of a chocolate colour, about the size of a pea. Captain Flinders, on his way out to Australia, mentions having observed a similar phenomenon. At page 92 of the first volume of his work, when in latitude 32° S. and longitude 104° E. he says there was a red scum on the water, some of which was examined with a microscope by Mr. Brown. It was found to consist of minute particles, half a line in length, composed of several cohering fibres; the fibres being of unequal length and the extremities appearing torn. These particles exhibited no motion when in salt water. Captain Chandler in 1766 says, "In some parts of the sea are parcels of matter of different colours, sometimes red, sometimes yellow, floating on the surface. It appears like the sawdust of wood, and sailors say it is 'the fry of the whale.' This appearance has been frequently observed by sailors.

The sea, particularly in warm climates, teems with myriads of animalculæ, and a calm is favourable for observing them. They are frequently found to cover a vast extent of surface. The phosphorescence of the sea, which has so often engaged the attention of naturalists, is sometimes connected with these animalculæ, and at other times is occasioned by medusæ (*Medusæ scintillantes*). I have repeatedly shaken a bottle of water in a dark place, and have observed little specks of light in it from the animalculæ it contained, when no medusæ could be detected even by the microscope."

On the morning of the 29th May, we made the island of St. Antonio, one of the Cape Verds, at which our orders directed us to stop for the purpose of including it in the chain of meridian distances, and thereby getting its correct longitude. The west point of this island is generally the last land seen by ships going round the Cape of Good Hope; and the establishment of it as a point of departure for them in particular, was an object of great importance. We had entered the limits of the trade winds in the latitude of 23° , but had carried a fine north-east wind from Madeira.

The weather now became hot, but at the same time it was not oppressive, and the nights were particularly delightful and refreshing. Saint Antonio is the northernmost of the Cape Verd islands, and, when approaching, it has the appearance of a rocky barren mountain risen abruptly from the ocean. The peak of the island was estimated on board the Chanticleer at 9700 feet high.

When we had approached the island sufficiently near, Captain Foster went on shore to make observations, while the Chanticleer remained under sail, waiting his return. He had no sooner landed than a solitary negro made his appearance from among the rocks and approached him, holding out a pumpkin for his acceptance. We had invaded his solitude, for this part of the island has no settlement, and he was naturally anxious to know the object of our visit. We soon made him comprehend that fish and vegetables would be acceptable, and the next minute he provided himself with a cane armed at one end with a nail, and to our surprise plunged into the sea. Here he continued floating and swimming about, supporting himself in the water with one hand, while

with the other he made use of his weapon among the finny tribe, employing each hand alternately in this manner. This was to us altogether a novel mode of fishing ; but not so to him, for in the space of two or three hours which were occupied by the observations, he had caught six fine cavalloes, weighing about nineteen pounds, besides several other smaller fish. With these spoils and ten pumpkins he came to Captain Foster and offered them for sale. He was a fine well-made man, and, although entirely alone, he appeared to be perfectly satisfied with his solitary condition. Captain Foster accompanied him to his cave, near to which he had a small piece of ground under cultivation, and on this, with the produce of his fishing expeditions, he depended for subsistence. His cave was small and confined ; it was ill calculated to afford shelter in any other than a tropical climate, and appeared to be the residence of some wild animal rather than that of a man. A few leaves answered the purpose of a bed, and some broken calabashes were the only utensils it contained. The shortness of our stay prevented us from learning the reason of his having chosen this extraordinary mode of

living, but we found that occasionally he visited the people on the opposite side of the island.

Saint Antonio, like the rest of the Cape Verd islands, is of volcanic origin; indeed most of those in the Atlantic are based on volcanic ridges, and the coral rocks are forced above the surface by this powerful agent. The island of Fogo, one of the Cape Verds, which is the cone of a volcano protruding above the surface of the sea, is constantly emitting smoke and ashes, and was so named in consequence of it. These islands are generally healthy; they are frequented by whalers and sealing vessels for salt, which is their principal article of commerce.

On the night of the 30th May, we were much gratified by a phenomenon of rather uncommon occurrence relating to the phosphorescence of the sea. It was about ten at night, while the vessel was sailing through the water at the rate of about five knots, the weather clear and the stars shining brightly above us, when our attention was suddenly attracted by a great number of dolphins sporting round the ship, and darting about in all directions with the swiftness of an arrow. The water was extremely brilliant, and appeared to be a sea of

stars, so numerous were the specks of light ; and the wake of the vessel, as she passed through it, was marked by one continued train of light. But beautiful as this was, we had been in some degree accustomed to it, and our attention was directed to the dolphins. We could distinctly see their whole form to a considerable depth below the surface of the water, from the bright light which they emitted, and were delighted with their gambols. A train of vivid light, not unlike that left by a rocket in its flight, but more continuous, suddenly appeared, and marked the dolphins to be in pursuit of prey ; a cracking noise was repeatedly heard in various directions on the surface of the water, and we soon found that it proceeded from the blowing of these fishes as we observed them again darting away in pursuit of their prey. I remember having seen a quantity of porpoises nearly in this place a few years ago in latitude 10° N. and longitude 26° W. and it is not unlikely that there may be some bank or other cause to make it their favourite resort. Labillardiere, who went in quest of the unfortunate Perouse, mentions his having met with a great many dolphins

about the same place. He found the ship among them as we had, and observes that it was easy to trace them by their luminous track.

By the 2nd June, we had fairly entered that part between the tropics which is known to sailors by the name of the variables, and, in a voyage where it is necessary to cross the line, is generally the most unpleasant part of it. Light airs and squalls of wind from every quarter, interrupted by calms, alternately succeed each other, attended with heavy rain and dark cloudy weather, the heat of which is very oppressive. This evening we observed lightning vivid in the extreme; and as the whole surface of the sea around us, as far as the horizon, became illumined by the successive flashes, the scene which presented itself was awful in the extreme, and was rendered still more so by the loud peals of thunder as they burst over our heads and died away in the distance. We were deluged with rain and compelled to be shut up below with the hatches battened down, in a close suffocating temperature of 86° , the atmosphere surcharged with moisture. The space which is occupied

by the variables is very uncertain, and depends on the position of the sun in the ecliptic. Sometimes they extend over six or seven degrees of latitude between the limits of the north-east and south-east trade winds, and at other times the limits of these winds are so near each other as to exclude the variables entirely. In crossing the variables, it is also the concern of the navigator to avoid being set over to the coast of America by the equatorial current, which runs to the westward sometimes a mile and a half per hour.

Day by day we were wafted a few miles; and on the 12th June, in latitude 2° N. we met a light breeze from the south-south-east, the first of the south-east trade. In the latitude of 6° N. as we lay becalmed, we observed the sea covered with the same dust, like the shakings of hemp, similar to that previously seen, but on examining the particles of it, they differed from the former and showed no signs whatever of animation.

During the long calms by which we were delayed in the vicinity of the equator, I had an opportunity of examining several kinds of medusæ, or the sea blubber. One day, while

some of our crew were bathing in a sail secured for the purpose by the side of the vessel, several of them were severely stung by these medusæ, and Mr. Miers, the carpenter, was so much injured by them as to be unable to swim. He suffered much pain and irritation in consequence, but nothing further. I have frequently handled them, and immediately afterwards, on applying my hands to my lips and face, have experienced some degree of pain, from which I am inclined to believe that it proceeded from the secretion of some acrid matter rather than from any electric property. I contracted a disease on my hands much resembling the itch in consequence of handling the medusæ and the *physalis*, or, as it is commonly called, the Portuguese man-of-war.

The medusa caravella was very common. The under surface had three pendulous arched processes joined to each other; and I am inclined to believe, that their food enters into the central or digestive cavity, around which is spread a loose delicate fimbriated membrane, tinged of a light pink colour, and which appears to serve at the same time the purpose of an intestine and aerating membrane. This

bears some analogy to the structure of the *aphrodita aculeata*, in which numerous minute tubes continued from the intestines, ramify through the body, and terminate in little oval cells or cæca in contact with the pulmonary vesicles. The medusa appears to be more simple. From the edge of the under surface were four delicate annulated chains, which possessed great contractile power; the circumference of the medusa was capable of considerable motion of the same nature. On cutting open the medusa, I found a small worm in its cavity, and some curious brittle glasslike substances, nearly the tenth part of an inch in length. The purpose of these I could not discover, but conjectured that they might act as ventricular or stomach teeth, to lacerate and entangle the food. Medusæ, or blubber, are generally supposed to consist of slimy gelatinous matter, but they are merely hydrophanes or water cells, analogous to the vitreous humour of the eye, for when punctured and hung up to drain, the water runs from them and leaves an almost impenetrable shred of membrane; and yet this lives and is capable of considerable motion.

In the course of our examination of the blubber, we picked up some blue globose substances, armed with lateral processes, which they cast off with great rapidity, and prevented our investigation of them. While trying the rate of the current, on hauling up the lead a small sucking fish was found adhering to it. The size of this was not more than four inches long; it was of a blue slate colour, and the oval disc or sucker on its head had seven serrated laminae. The tail of the fish was trifurcated, which distinguishes it from the known species of its genus, and I proposed to name it *echeneis trianarus*. These little creatures adhere to anything. On some parts of the coast of Africa these fish are very numerous. His Majesty's ship North Star, while on that station, had so many sticking to her bottom that her sailing was impeded by them; and as the most effectual mode of clearing them away, she went up one of the rivers, that the action of the fresh water might effect it. Columbus, it is said, in the course of his voyage among the West India islands, observed some natives fishing from a canoe, and was struck with the extraordinary means they adopted

This was nothing more or less than a sucking fish, which they allowed to fasten itself to a fish, and thus drew them both out of the water together.

At sunset, on the 4th June, we observed a radiated cone in the eastern horizon, the base of which extended towards the zenith. The general colour of the rays by which it was formed was pink, with intervening ones of bright blue, and those on the exterior of the cone were also blue of a green cast. At the time we observed this cone, the clouds in the western horizon were of a deep black, with rather a blue cast. This cone lasted about seven minutes, and was the most splendid of any that we saw. Between the tropics at sunset and sunrise, there is a tendency to form the zodiacal light, or diverging beams of a pink or roseate hue based in horizon.

During our passage through the variables, the mean temperature of the air was 80° , and that of the sea-water at the surface was the same. The temperature of the rain-water, which we frequently tried, was 76° to 78° , a near coincidence with the dew point, which, however, was a very difficult matter to obtain

in these regions with accuracy. The heavy rains that we experienced cooled the air, and brought down the thermometer two or three degrees, at the same time that it diminished the temperature of the surface water of the sea. In a warm atmosphere thus saturated with moisture, mildew formed with great rapidity. The foresail and awning became permanently dyed of a sooty colour, from the mildew which formed upon them in the open air ; and in the short space of twelve hours, wet or washed linen, that was hung up for the purpose of drying, soon became spotted with mildew ; black silk handkerchiefs in the officers' drawers became covered with red and ash-coloured spots ; drawing paper was spoiled ; shoes were covered with mildew, and in the space of a few hours were found with woolly filaments inside of them ; the under side of the chairs on which we sat were mildewed ; damp clothes in a close place were quickly covered with fungi ; the stains on the linen and cloth were permanent, and could not be effaced by washing, although the texture of the cloth was not injured : these results frequently employed our speculations.

During the calms we frequently sent down the sounding lead to a depth of four hundred fathoms, with Sykes's thermometer and Dr. Marcet's iron water-bottle attached to it. We invariably found the surface water to be 80°, and at four hundred fathoms below the surface it was 44° Fahrenheit. The water brought up in Marcet's bottle always indicated a higher temperature than Sykes's thermometer. The above experiments were made in a fathomless sea, one hundred miles from the equator. The sea at night frequently broke with a phosphoric flash, like that of sheet-lightning, but the scintillating appearance of the water was very much diminished.

On the morning of the 17th we saw St. Paul's rocks, distant fourteen miles from us; and on the 18th June we crossed the equator, and made the island of Fernando Noronha on the 20th. We were not long approaching the island, and anchored in Peak bay. Our stay during six days was employed in making observations, during which time we found some relief from the oppressive heat which we had lately experienced. The thermometer was generally at 80°, with a cool refreshing breeze.

As our orders directed us to return to this island, I have deferred my remarks on it for a future page.

Having sailed from Fernando Noronha on the 26th of June, by the 6th of July we had made sufficient progress to the southward to obtain soundings, on the Abrolhos bank in the latitude of $17^{\circ} 35'$ S. and long. 37° W. in twelve to sixteen fathoms. The question whether shoals and rocks produce any diminution in the temperature of the water near them now employed our attention, and we were very careful in making our observations on this bank; but with all our care we could discover no particular change, and concluded that the vicinity of shoals within the tropics is not denoted by any coolness in the water. We obtained some *fuci* and *ulva* of bright green colour, resembling that of grass; and in the course of our progress I could not detect any want of colour in sea weeds obtained from a depth of fifty fathoms, whatever may be the effect on them of the presence or deficiency of light at that depth.

At daylight, on the 11th of July, we observed a rakish-looking schooner bearing down upon us. Having neared us, she fired a gun,

and hoisted Brazilian colours; Captain Foster thought it best to disregard her motions, and accordingly we took no notice of her. But on seeing herself thus slighted, the schooner made sail after us, determined, apparently, to give us some trouble from the suspicious nature of her appearance. The Chanticleer was not intended for a fighting ship, having only two guns; nevertheless, we could take care of ourselves, which our companion did not seem to be aware of, and we accordingly beat to quarters, and prepared for action. By this time the schooner had gained upon us considerably; and having everything ready, we wore round and hove to the wind, to wait and give her as warm a reception as we could, with our two guns and a handful of marines.

Our preparations had not been unobserved, for as she came near us she altered her course on a sudden, and sheered off without even paying us the compliment of speaking, or ascertaining who we were. We had no intention of pursuing her, for the mission on which the Chanticleer was sent admitted of no such proceeding; therefore we continued on our course for Rio Janeiro, and in the evening we lost

sight of our new acquaintance. At ten P.M. some of the officers believed they saw lights, which we imagined could proceed from no other vessel than the schooner, and it was supposed that she was hovering about us to take the little Chanticleer by surprise. Determined on being prepared at all points, Captain Foster summoned his men again to their quarters; the sails were trimmed so as to be easily handled; and at the same time, to keep the vessel in command, the two guns were got ready and everything prepared for our troublesome visiter as before; and although we could not show so many teeth as he, yet in physical force we thought ourselves superior to him. We continued at quarters all night, but in the morning found no signs whatever of the schooner.

At about eighty miles from the coast we observed a change in the appearance of the water, which from a deep blue colour became of a dull green. On the 13th July we made Cape Frio, and experienced the long wave termed by seamen ground swell, which is a good indication of the vicinity of the land. Cape Frio is an important headland to navigators, being generally the last defined point of

the coast seen in leaving Rio and the first on going there, and its correct position is therefore an object of considerable importance. The cape is sixty-four miles from Rio Janeiro.

Having neared it sufficiently, Captain Foster left the vessel in his gig for the purpose of making observations on the Cape for its latitude and longitude. Having succeeded in obtaining these, he returned on board, and we pursued our course for the harbour of Rio Janeiro. There is very good and secure anchorage for ships of any size in the harbour formed by the island, the south point of which is Cape Frio. The largest entrance, which is that to the northward, has a depth of twenty-two fathoms. The country about is very mountainous, apparently well covered with wood and supplied with water. The island is rocky and covered with cactuses. The rock is principally formed of feldspar and quartz; the feldspar decomposing into beds of petunse, or porcelain clay. Some of the most perfect specimens of marine grotto work were obtained from it. The aggregation of shells and the deposit and incrustation of coral upon them produces a very beautiful appearance.

At day-break on the 16th we observed the islands at the mouth of the harbour of Rio. The sea breeze at this time of the year is very irregular in its arrival on the coast, and we lay becalmed during the greater part of the day. In the afternoon a light breeze wafted us slowly towards the harbour's mouth, and gave us ample opportunity for enjoying the magnificent scenery which presented itself. Mountains of steep and sudden declivity rose abruptly from the sea on every hand, their lofty summits terminating in peaks and ridges covered entirely with one dark mass of verdure. To a stranger, whose eye is familiar with the coast scenery of England, that of South America is peculiarly striking. The scale of Nature is totally different. He is lost in admiration at the lofty grandeur of the mountains, which in some places presenting abrupt high precipices, in others gradually subside into luxuriant valleys and fertile glens, rich in all the stores of vegetation and glowing with the beauty of eternal spring. Sequestered dells are alternately succeeded by extensive plains assuming every varied form, and the Corcovado mountain rears its lofty summit in proud pre-

eminence over the heights in the vicinity of Rio Janeiro. In going into the harbour a remarkable hill presents itself on the left, which, from the resemblance it bears to a sugarloaf, has received that appellation. It rises abruptly from the water to the height of one thousand and fifty feet. The entrance to the harbour is narrow, being guarded on the right by a strong fort called Santa Cruz, where an officer and party of men are stationed. It is the duty of these persons to hail every ship that passes, and a boat generally comes from it to ascertain what ship is entering the harbour. Immediately within the entrance of the harbour the shores on either side recede from each other to a considerable distance, leaving an extensive basin, which is generally considered one of the most magnificent harbours in the world.

Cheerful and animating as is the whole scenery which presents itself on entering the harbour, not only from the bounties of Nature, but the numerous vessels which are sailing about and at anchor, I felt some disappointment in beholding it. Some years ago I had visited this celebrated port, when my heart was light and life was in its spring. Well do

I remember how delighted I was then with the glorious scenery of Rio Janeiro; and I had fondly anticipated a renewal of such feelings. But my young fancy, then so vigorous, was now sear and in its yellow leaf; imagination drooped her pinion; and I wanted that enthusiasm and high tone of feeling which is the accompaniment of youth. At first I satisfied myself with the belief that it was in the height of summer, when Nature wore her most resplendent robe, that I had contemplated the beauties of Rio with the fond attentive gaze of youth, and I persuaded myself that this was the winter. But alas, all around was as glorious as ever—the change was in myself; it was my own infirmity, and life's evening shades, which had induced a solemnity of thought, and deprived of its charm the scene that had once imparted the feelings of joy. I shall never forget the impression it made on my mind; it was the first time that I had known such a feeling.

“ Still at our lot it were vain to repine ;
Youth cannot return, nor the days of lang syne.”

We dropped anchor in the harbour at six in the evening, and soon learned that the vessel

which we had met outside answered to the description of a well known pirate that had attacked some of our vessels on the coast. On one occasion her captain boarded a ship, and having bound the master of her, threatened to blow out his brains if he did not deliver up all his money, at the same time that his men were plundering his vessel. The master in this condition begged hard that his watch might be spared, as it was his mother's gift. "Fool," said the ruffian, "I thought you were old enough to have forgotten your mother—what will your mother's gift avail you if you lose your life, which you will forfeit by your obstinacy?" This privateer mounted twelve guns, and all her crew spoke English.

CHAPTER II.

Some account of Rio Janeiro.

THE city of Rio Janeiro stands on a dry gravelly soil, close to the southern side of a capacious bay. It occupies a space of nearly two miles in length, and about three-fourths of a mile in breadth. A ridge of lofty hills flank the city, and by surrounding the spacious basin which forms the harbour, imparts an air of grandeur to the whole scene, as it appears from the anchorage. On an eminence in the town, and near the harbour, stands a church, which was the first established at Rio, and from which the city obtained the original name of San Sebastian. The circumference of the basin forming the harbour is about thirty miles in extent, and is surrounded by lofty mountains. Among the principal of these is the Corcovado, which translated, signifies "Parrot's-beak." The peak of this mountain is two

thousand feet high. Beneath the Corcovado, in a lower ridge, are quarries of beautiful gneiss, which is used as a building stone at Rio. Close by these is the village of Bota Fogo, on the shore of a little tranquil bay, on one of the elevated points of which stands the church and convent of Gloria. Bota Fogo is delightfully situated, and contains several good houses, which are occupied by genteel families. The lofty and picturesque peaks of the Organ mountains appear over the inner part of the harbour, clothed with luxuriant foliage, and are three thousand two hundred and ten feet in height. The harbour of Rio Janeiro has but one fault, which is, that of being too large: ships of all nations are generally found in it, but on our arrival there was no British man-of-war at anchor there. Shortly afterwards, however, his Majesty's ship *Ganges* arrived, with the flag of Rear-Admiral Otway; and soon after his Majesty's ship *Blossom*, commanded by Captain Beechey, on his way home from the Pacific Ocean, whither he had been sent for the purpose of penetrating as far as he could up Bhering Strait, to meet the polar voyagers, Sir Edward Parry and Sir John Franklin.

Rio Janeiro is the metropolis of the great and important empire of Brazil. It is situated on the western side of the basin before mentioned, about three miles from the sea at its entrance. The site of the city is judiciously chosen, and is in every way adapted for the seat of government and commerce; but the city itself does not correspond with the splendid scenery by which it is surrounded, although it is large and populous, tolerably well built, and contains good commodious houses. The streets are very narrow, and lie at right angles to each other; they are well paved, but badly lighted. The houses are generally lofty, and the lower windows being covered with latticed work, give them very much the appearance of being shut up. The usual custom of the Portuguese is adopted here, of a particular street being occupied by those of a particular trade; and a stranger who has not paraded the streets of Lisbon, would be struck by seeing one filled with jewellers and silversmiths, another with milliners; indeed, so far is this regulation observed, that even the pork and beef butchers must have a street separate from each other. The various tradesmen appear to have a large

stock on hand, but the shops have in general a dirty slovenly appearance, not to be compared with the neatness and order of those even of the second class in London; and while the boards of the jewellers glitter with the amethyst, the topaz, and the diamond, a want of taste in their arrangement and finish in the gold and silver work materially lessens the effect which they are calculated to produce by their profusion and richness. Rio Janeiro is celebrated for the variety of its precious stones, the produce of the mines. The practice of numbering the houses, even on one side, and odd on the other, in the same manner as adopted in Regent Street of our metropolis, is observed here, a system which is attended with much convenience.

Like other foreign cities, Rio Janeiro, having no sewers, is very deficient, in point of cleanliness, and the houses are subject to the great inconvenience of a want of water. This article is supplied by means of an aqueduct built on two tiers of arches. At its commencement, which is a short distance from the city, the water gushes from a precipitous rock, and soon after passing beneath a convent, it is con-

ducted to various parts of the town. The large fountain is situated in the principal square of the city, named Largo do Paco, over which appears the following Latin inscription :

“ Ignifero curru populos dum Phœbus adurit,
Vasconcellus aquis ejicit urbe sitim ;
Phœbe, retro propera, et cœli statione relictâ,
Præclaro potius nitere adesse viro ;”

which may be thus translated nearly literally :

While Phœbus is riding in fiery car,
And fearfully scorching the earth at his will,
The horrors of thirst Vasconcello afar
Expels from this city of favoured Brazil.
Oh ! Phœbus desist, relinquish thy throne,
And make the design of the hero thine own.

This fountain being by the sea-side, the boats from the shipping easily obtain water from it ; and to supply the houses, forms a part of the duty of the numerous slaves who are in the city. It is the duty of these people also, to carry to the water-side all dirt from the streets and houses. But if filth were productive of disease, and malaria was the exciting cause of fever, Rio Janeiro surely would be severely visited, for heaps of filth are scattered about on the beach and in the suburbs ; and yet the city is healthy, no virulent endemic is found there, and the general purity of the air seems to be unimpaired.

The grand square, which is immediately overlooked by the palace, adjoins the water-side, and contains the great public landing-place, so that a stranger enters immediately into the best part of the town. In the evening it forms an agreeable promenade, and has a parapet wall along the water-side, with stone seats for the accommodation of the public.

A stranger on landing at Rio Janeiro is immediately struck by the great number of slaves, which may be said to infest the streets. As he leaves the landing-place, his ears are assailed by their monotonous shouts and the rattling of chains which proceed from the various parties of them as they perform their work. These unfortunate creatures supply the place of the beasts of burden to the people of Rio, and are to be seen linked together drawing carts and sledges, and performing other laborious duties, with an apparent unconcern and a degree of hilarity which are hardly credible.

It is the custom of the slaves, and it appears to be general among negroes, to accompany their labours with their own native music, at least with such as their voices afford. This has no doubt the effect of inspiring them to

greater efforts; and the streets resound with the echo of their uncouth song and the rattling of their chains. They are accompanied and superintended in the performance of their duties by an armed military force; but their number now amounts to a fearful height, being two-thirds of the whole population of the city; and the inhabitants of Rio Janeiro, like those of imperial Rome, may one day suffer from the effects of their temerity. A precedent is afforded in the New World, and at no great distance from them; the awful tragedy of St. Domingo, with all its horrors, appalling as they are, may yet be repeated in the capital of Brazil.

Some of the slaves go about in these working parties entirely naked, exhibiting shocking proofs of ill-treatment on the back, face, and neck; and from the number of these scars which a slave carries about him, a tolerably correct opinion may be formed of his character, as well as that of his master. Among the slaves are the best artisans and mechanics which the country can boast, and many who are often entrusted with the business of their owners, and fill the office of confidential ser-

vants. Some lead a happy life in the quiet circle of their masters' families, others are not so fortunate; but the natural buoyancy of spirit which they all possess renders them capable of undergoing any kind of living; and in the midst of their hardships, and while labouring under the severity of their toils in a broiling sun, the joyful laugh, the animated gesture, and the song of mirth, characterize them as contented and happy.

So predominant is this feeling among them, that those still on board the vessels in the harbour, just torn from their native land, are equally as unconcerned for their condition. It is always painful to contemplate sights such as these, and we are prompted to ask of ourselves,

“ Was man ordained the slave of man to toil,
Yoked with the brutes and fettered to the soil ?”

But a benevolent Providence has made them contented with their lot; they know no repining, and appear happier than is imagined by our most considerate philanthropists.

The churches and convents of Rio Janeiro are numerous and very respectable. They are in general conspicuously placed, those of San Francisco and Candelaria being most worthy

of note. Many are handsomely, and some gaudily, decorated with images and paintings. This system is greatly objected to by some people, but for my own part I think that suitable and appropriate ornaments belong to the temple of God; not that they should in the least influence our conduct there, but that the devotion of worldly riches to such a purpose evinces our desire of honouring the mansion in which we assemble with the only means in our power, while we prostrate ourselves before our Creator. The service of the Catholic church, as seen here, appears to have as much reference to the ships in the harbour as to the people of Rio Janeiro, and to approach in some degree the ceremony of the Roman augurs. The Catholic religion has engrafted upon Christianity such an incongruous mass of forms and ceremonies, that the purity and simplicity of its divine precepts are overshadowed by the glittering of toys and images. It is a religion that works on the imagination without convincing the reasoning powers of man; it takes captive the homage of the simple and those of slender minds and an easy faith.

In Rio Janeiro, since the accession of Don Pedro, Catholicism has been shorn of its over-

weening influence, and the immense revenues of the churches have been much curtailed. As a proof of the progress of liberalism, we now find that the Bible is allowed to be circulated. A short time since, a person who might be found with a Bible in his possession was declared guilty of an offence, the punishment of which was transportation : but in addition to this progress in religious toleration, a protestant church has been erected, and the duties of it are duly performed by an English clergyman.

In the famous city of Rio Janeiro, not long ago, a bookseller's shop was rarely to be seen, but there are now several of very fair pretensions, although it must be acknowledged that the book-worm is as yet the greatest encourager of literature, by destroying the publications of Europe soon after they appear, and thereby increasing the demand for them. Two Journals are published every week ; and an English school has lately been established in the city for the purpose of instructing the natives in our language.

The public gardens of Rio Janeiro are situated at Bota Fogo ; but neither on account of their forming promenades, nor as possessing

great interest as gardens, are they kept in a decent condition. On the contrary, they are allowed to remain in a very neglected and slovenly state. The Botanic Garden is about nine miles from the city, and near the extraordinary mountain called the Sugar-loaf. The tea plant has been tried there on an extensive scale, but the experiment has not succeeded, the produce having been rejected as useless. Various other exotics are cultivated in this garden, such as cinnamon, nutmegs, &c.

Rio Janeiro is not without its hotels and *caffés*, among which are the *Hôtel du Nord* and *Hôtel de l'Empire*, where strangers may be accommodated. Soups, stews, and rich dishes, form the favourite articles of food; and they have a method of stuffing cabbages with forced-meat balls, a dish which, perhaps, even Dr. Kitchener's profound experience in the culinary art could not boast.

The Museum is well worth visiting, and contains some magnificent specimens of the riches of Brazil. The Opera-house is also well supplied with performers; but among the public places of Rio, the *Campo d'Acclamação* forms an important feature, not on account either of

the buildings which surround it, or of any particular superiority belonging to it, but in consequence of its being the place where the independence of the Brazilian Empire was proclaimed in the year 1823. It is a large square, about a quarter of a mile in extent each way, and situated at the west end of the city. It is ornamented by a handsome public fountain, and a rostrum, which was regularly visited by the Emperor Don Pedro, on the anniversary of the independence, for the purpose of ratifying and renewing the contract between himself and the people.

The population of Rio Janeiro now amounts to about one hundred and fifty thousand Brazilians, Portuguese and slaves; but in this number is included a few French, German, and English merchants, of which the French are the most numerous class, and possess respectable stores of merchandise. The English residents are more wealthy, while the Germans are artisans and soldiers. But of the motley collection of persons living in this city, with principles and feelings as opposite as their dialects, it is difficult and almost impossible to convey a correct idea. Here law, indeed, may

be said to be scarce; but, unfortunately, justice is equally so, and a looseness of morals and carelessness of bringing offenders to trial prevail to a fearful extent. There is no public prosecutor, and the Government takes no cognizance of crime; the police is bad, and unless the unhappy victim of revenge were again brought to life, to act as the accuser, the sensation produced in the city at the account of his murder gradually wears away, and the assassin is secure. The laws may be good in theory, but if so, they are not practised. It is impossible to arrive at the amount of crime in Rio Janeiro. In England the press proclaims the good and bad, so that foreigners are surprised at the daily catalogue of delinquents; but the weak and servile writers of these parts care not who plunders or who assassinates, their press is neither employed in warning others of their danger, nor assisting to bring offenders to justice; instead of doing this, which would really benefit their country, they are engaged in forming some vehement and empty political declamation, or some useless and abstract theories of government which may happen to be the fashion of the day.

The commerce and revenue of so rich an empire as Brazil ought to be great. Vessels of all nations are to be found at her capital, but those of England are the most numerous. The imports from England are estimated at six millions sterling, and consist of all manner of dry goods. Flour is imported in large quantities from the United States; and this article, as long as it continues to be the staff of life, will be to that country a treasure greater than gold and silver mines are to Peru. Besides flour, candles and soap are also exported in large quantities from America. Tea, silks, and crapes are brought from China by American ships; and there is, besides, a considerable coasting trade.

Coffee is the staple commodity of Rio Janeiro, and its good qualities are well known; but the sugar is deficient of sweetness, and the indigo is so worthless, from being neglected, that it is entirely excluded from the market. The tropical fruits of the season are to be had here in great plenty, but oranges are to be met with in profusion nearly all the year round. It is usual for the crews of his Majesty's ships on the South American station,

and also on other warm stations, to be supplied with fruit; each man is allowed six oranges per day, but they may be bought at the rate of about three pence per hundred. Ipecacuanha is the principal drug to be had at Rio, and is the produce of the country; but I was much surprised to find that several others, for which the place is dependent on the northern parts of the empire, are dearer at Rio than in London, and that they are often procured from London in preference to Para. This appeared to me extraordinary; but such is the uncertainty of the conveyance, and the want of that immediate intercourse with the different parts of Brazil, which a few steam-boats would soon rectify.

The tree-ferns on the Corcovado (*polypodium Corcovadense*) may be classed among the most elegant productions in the vegetable kingdom. These ferns grow to the height of twenty feet, and are frequently entwined with lesser ferns, thus clothing their stems with all the elegance of ivy. The anvil bird (*proenias ventralis*) is perched on its branches, and repeats its singular note, which sounds like the blow of a hammer on an anvil. The beauty of plumage, which forms the peculiar feature in the birds of

Brazil, is well known ; Nature may be truly said to have lavished her favours in decking out the feathered tribes of these regions, for they are all remarkably handsome, and objects of admiration to every visiter. The insects are equally so, particularly the various descriptions of butterflies, many collections of which are sent to Europe. Fireflies, beetles, grasshoppers, are plentiful; the webs of some of the spiders are strong enough to entangle a little bird; and ants are so large that they are fried and made into a delicate dish. Snakes are very common and plentiful; every variety of these creatures is to be had, from the boa-constrictor of thirty-five feet in length, to the little delicate green snake, the length of which does not exceed four inches. Rio is tolerably supplied with fish. The shrimps are very large, and when made into pies are an excellent dish.

In articles of country manufacture Rio has little to boast. All that I could discover consisted of a coarse cotton cloth which is worn by the slaves, and a small quantity of leather tanned with the bark of the mangrove. Nor are the naval concerns of the empire in a much more flourishing condition. The few ships of

war that the emperor had, were kept in repair at a small dockyard, but the expenses of it seemed to be greater than the people were inclined to afford. The caulkers are good workmen, and generally find employment on board our men-of-war, when they are fresh from England. A ship, although she may have left one of our dockyards in perfectly good order, generally requires caulking from the effects of the climate.

The country about Rio in a geological point of view has large claims to attention. Granite and gneiss are the prevailing formation. The large rock called the Sugar-loaf, at the entrance of the harbour, is composed of granite; and all the rocks I could find were either of granite or gneiss, the former being traversed in all directions by numerous veins of quartz. Some of the hills below the Corcovado mountain are of gneiss which contains small garnets in considerable numbers, and the quarries from which the building stone is obtained consist entirely of granite. The soil in general is a red-coloured clay having a burnt appearance, and is very fertile. The rocks in some parts are decomposed into sand and petunse; the sand

having been carried down into the plains, while the petunse remains, and forms extensive beds of porcelain clay admirably adapted for the use of the potter. The lower parts of the granite hills were found chiefly in this condition; the granite having crumbled into micaceous sand and greasy unctuous clay.

The currency of the country is generally in much confusion, varying in its value from political causes. There is a depreciated paper currency at fifty per cent. below par. Copper coin is at a high premium, and silver is the standard.

CHAPTER III.

Continuation of the voyage.—The island of St. Catherine.—Produce.—People.—Peculiar quality of the Ferns.—Arrival at Monte Video.—Change of temperature.—River La Plata.—Prepare for Pendulum operations on Rat Island.—Military operations going forward.—State of the fortress.—Lieutenant Williams's adventure.—An awkward position.—The Garrison in confusion.—A false alarm.—Excursion to a Quinta.

AFTER twelve days' stay at Rio Janeiro, we departed early in the morning of the 28th July, and were no sooner fairly at sea than we were enveloped in fog, the first we had experienced since leaving England. We had the advantage, however, of a smooth sea, the wind being light, from the north-east.

On our way to the southward we were fortunate in having fine weather, the days being remarkably clear, but the nights attended with copious dews, so heavy that the decks in the morning were as wet as if it had been raining all the previous night. The average

temperature of the day was 70°, and that of the night 64° of Fahrenheit.

At daylight on the 1st of August we were much gratified with the beautiful prospect presented by the island of St. Catherine, and the coast near it. A Brazilian brig-of-war, commanded by Captain Hayden, an Englishman, happened to be going to the anchorage, and we both ran down before a fine sea-breeze, and shortly found ourselves snugly at anchor in a safe and spacious bay formed by the island and the main land of South America. We had a visit from Captain Hayden as a matter of etiquette.

The island of St. Catherine is the acknowledged garden of the Brazils. There Nature deals out with an unsparing hand all her choicest treasures to supply the wants of man. The view from the anchorage is of the most interesting description. The island is about thirty miles in length; and rises in some parts abruptly, and in others gradually, to a considerable height. The sides of the hills are clothed with the most luxuriant foliage, which is broken here and there by cultivated patches of ground, enlivened with the whitewashed huts of the natives, appearing still whiter as they reflect

the powerful rays of the sun. The shores of the island are much indented, forming little cheerful bays, some of which afford safe anchorage to ships from every wind. The island varies from two to five miles in breadth.

It is rather remarkable that, notwithstanding the richness of the country about St. Catherine, and the peculiar advantages in point of agriculture which this island possesses, there should be no large town near it. A mere assemblage of a few huts, hardly deserving the name of a village, is to be found at the bottom of one or two of the bays, while the island is scattered with them here and there. The village is protected by a fort named Anhatorim, which commands the entrance to the anchorage. The island produces every kind of tropical fruit and vegetables, but is mostly celebrated for its coffee and rice, the former of which is held in great estimation. Sugar, cotton, tobacco, and indigo, are extensively cultivated; and in addition to these, the natives prepare jerked beef, as well as bacon, for exportation.

The employment of the men consists either in cultivation or fishing, while that of the women is making cloth of the cotton, besides

their domestic pursuits. The indigo serves them to dye with; the cassada root furnishes them with bread, flour, and starch; and the bark of shrubs is converted into twine. The women also employ themselves in making hats with a kind of sedge, which grows plentifully; and shoes are made of the raw hides of their cattle. We found the people remarkably civil; they live a very retired life, and have a more healthy appearance than the inhabitants of Rio Janeiro.

The shortness of our stay prevented our seeing much of them; and the few remarks I was enabled to make on subjects of natural history are reserved for another place. One remarkable circumstance which came under my observation I will mention. In the course of my ramble in the island, when gathering ferns, I was particularly struck by observing that each plant had formed for itself a bed of fine mould of several inches in depth and extent; beyond the circle of its own immediate growth was naked rock; and this appeared so general, that I could not help attributing the extraordinary circumstance to their power of decomposing the rock, their fibrous roots penetrating into

every crevice, and by expanding in growth, appearing to split it into the smallest fragments.

Artificial flowers of feathers are made there, and shells are even very tastefully employed for the same purpose, both of which were freely offered to us for sale at a moderate price, as well as the beautifully feathered skins of the toucan. While we stayed, the weather was cloudy, but very tranquil; the mean temperature of the air was 68° , and that of the sea 70° of Fahrenheit.

On the 6th of August we left the island of St. Catherine, and observed the light on Flores Island as we passed it rapidly with a strong north-east wind in the evening of the 15th. In fact, we entered the river La Plata, or Plate as it is commonly termed by sailors, in a thunder-storm; we found our way in safely, and came to an anchor a little before midnight off Monte Video. As we approached the river, a remarkable change was observed in the temperature of the atmosphere, and the thermometer indicated a decrease of 10° , and there was a decrease of 16° in that of the water. Our approach to the river was also indicated by a

change in the appearance of the water, which from a bright blue colour assumed that of a turbid and dull green, attended with a short breaking swell. The depth or height to which the waves rise and fall is still a matter of speculation, some attributing it to six feet rise and six feet fall, and others again according to their own individual observation, or their ideas of the bounds of probability. I have heard many experienced practical seamen estimate it at thirty feet, nor does this appear to me in the least degree an exaggeration; but there is a remarkable difference, well known to sailors, between the waves when they are influenced by the shallowness of the water, and those in the fathomless ocean; the former rise abruptly, breaking at short intervals, while the summits of the latter, being quite unobstructed, are farther apart from each other, and no doubt rise considerably higher.

The river La Plata owes its name to the Spaniards, who transferred the produce of the silver mines of Chili and Peru on its waters to the ocean, and thence to Europe. The gold and silver were brought from those provinces across the Andes to Buenos Ayres, from whence

it was shipped; but the extension of discovery no sooner opened the passage round Cape Horn, than the river Plata lost its original importance. In point of magnitude it is the third river of the New World; at its mouth it is a hundred miles wide; at Monte Video it is fifty miles wide, this town being seventy miles up its stream, where the water is fresh and the tide overcome by its rapidity. At Buenos Ayres, situated one hundred and seventy miles from its mouth, the width of the river is twenty-five miles; above which it takes its rise in numerous streams, distant about one thousand five hundred miles in the lofty equatorial regions of Brazil. The navigation of the river is much impeded by shoals between Monte Video and Buenos Ayres; and the depth of the water is so little at this latter place, that a strong southwest wind, called in the country a pampero, is sufficient to lay the bed of it dry more than a mile from its southern bank, and the ships which may happen to be there, of course take the ground. The banks on each side are the termination of vast plains, on which no villages are to be seen to cheer and adorn the scene;

and nought is found to break the solitude, save herds of cattle that own no master's stall.

Immediately after our arrival Captain Foster waited on the Consul to request that he would point out some convenient spot for the reception of the instruments which were to employ the time of our stay at Monte Video. Captain Foster was desirous of fixing them under the mount, but war was going forward; and finding that the Brazilians were then closely besieged by the Monteneros, and that we might be frequently annoyed by their visits, or inconvenienced by the suspicion of favouring the Brazilian party, it was decided that the observations should be made on Rat Island. The Chanticleer was accordingly got under weigh, and moored as near as possible to the island, for the convenience of landing the tents and instruments. This being the first place of our actually commencing the pendulum experiments, all was novelty and excitement; a serious difficulty, however, arose from the island being very small, and having a number of guns for its protection, as well as from its containing the principal magazine in the possession of the Brazi-

lians. In case of an attack also, which by the account of the governor of the island was far from being improbable, the concussion produced by the discharge of the guns would materially injure the instruments, unless they were speedily moved ; and even as it was, the magnetic operations became totally useless from the quantity of metal by which they were surrounded.

But we had no choice, and in a short time our little village began to be established. A room in the fort was given up to Captain Foster, for the pendulum ; carpenters set to work, and the floor soon displaced to form a firm basis for the frame of this instrument. The house we carried with us, for the purpose of making the observations in when no better one could be obtained, was quickly put together, being ingeniously constructed of panels, which, when arranged, formed a room with eight windows of about twelve feet square, and fourteen or fifteen high. This was converted *pro tempore* into a mess-room ; the governor was to join our mess, the quarters and establishment of officers in that service being very indifferent, at least in the estima-

tion of us Englishmen, and perhaps I might say I have not judged too hastily, from the delight I fancied was depicted on the poor man's countenance when he sat down (for the first time, no doubt,) to the comfort and substantial fare of a good English breakfast.

The next point to be considered was the meridian mark, which was rather a difficult one to be determined, as it was necessary that it should be placed at a distance from the island on the main land outside the Brazilian lines. It was also necessary to watch it, not only to prevent its being stolen, but to keep the lamp constantly alight during the observations. Captain Foster despatched Lieutenant Williams with the mark, and instructions to attend to certain signals that were determined on, so that it might be placed exactly in the meridian. The gig was accordingly manned; and Lieutenant Williams, who proceeded to perform this duty, has obligingly furnished me with the following account of his adventures.

“ The boat when we landed was placed in a small cove, at some distance from the place to which we were going. One man accompanied me with the things we had to take with

us, the rest were ordered to remain by the boat. When we arrived at the place determined on, we commenced throwing up a little mound of earth on which to place the mark, and were very busily engaged with our work, when turning round on a sudden, I perceived a gaucho on horseback, who had for some time observed our movements, and had stolen down upon us between the intervening range of hills : my first impulse was to call to some of the boat's crew to be on the alert, but he immediately cut off all our communication with them by placing himself between us, and cocking his musket. I could not help just then thinking with Byron, "there is something in the cocking of a pistol which grates harshly on the ear;" but finding I had no resource left than making a virtue of necessity, I approached towards him with the greatest apparent confidence. Seeing me advance, he also came forward and began speaking to me in Spanish; but unfortunately, not being versed in that language, what he said was lost. The only conclusion I could possibly arrive at was, that he would naturally ask me who I was, and where I came from. So pointing to the Chanticleer,

the words "Fragata Anglesa," appeared to produce some effect on him. But it was not until a kind of questionable conference had passed between us, by signs on my part and many hurried questions on his, that we seemed to come to an amicable understanding. During this introduction, my situation was no enviable one; for the gaucho was sitting quietly on horseback, with his piece presented at me a great part of the time, while I stood quite helpless, and ready to be shot whenever it might suit his convenience. I was not sorry therefore, when, on pointing to the island and showing him my telescope, he dismounted, took the glass, and, resting it on his saddle, looked through it at the island; but probably not knowing much of what he saw, he shook his head and said something, by which I concluded he meant me to mount his horse. This, as well as I was able, I politely refused. I suppose he had seen sufficient to convince him that I was an officer; after scrutinizing me well again and again, for he appeared suddenly to make up his mind to be off, he mounted his horse, and making me a hasty bow, vanished in an instant, to my satisfaction. The fellow

was armed from top to toe, having a lasso, cutlass, carbine, and brace of pistols; and I have no doubt that my own safety in a great measure proceeded from my being unprovided with fire-arms. He had not left me long when I saw two Brazilian soldiers in hot pursuit of him; but there did not appear to be the least chance of catching him, as they are afraid to venture far outside of their lines. We were not however disturbed by them any more, although the carpenter and myself had, during our stay, to watch the lamp till about two o'clock in the morning, when the signal was made for our return."

On reaching the island one night, we found that during our absence the Buenos-Ayrean squadron had passed in the offing, and the governor told us he had received orders to be prepared in case of an attack. All the soldiers were employed getting everything ready. It appeared to us very doubtful whether the guns would actually bear a charge of powder, as they and their carriages were in such a ruinous state. The moat round the fort was no larger than a common ditch, and it was our constant habit, although a plank had been laid for our

accommodation, to jump across it; so we considered, should any attack really be made on us, our worthy governor, fort and all, would shortly be in the hands of the Buenos-Ayreans. At sunset the sentries had been doubled, and the old governor was anxiously parading the fort to see if they were on the look-out. A few men were sent to different points of the island to see if any boats or suspicious vessels were in sight. All however passed off without any report being made till about eight o'clock, when one of the look-out men came running in to the governor, almost breathless, to state that a vessel was anchored between the island and the main. This was sufficient, and in a moment the garrison beat to quarters. Captain Foster wished to make the signal to the Chanticleer for the boats to take the instruments and ourselves off the island, as we knew not what destruction might await them; but this the governor would not permit, thinking no doubt, in event of necessity, that we might be of some assistance in getting him into safety. We consoled ourselves therefore with the hope that whatever might occur to the rest, the peaceable nature of our occupation

would secure us from being molested. But all was hurry and confusion, and the darkness of the night contributed to make things worse. It was considered high time to commence hostile operations against the vessel that had dared to approach the island, and accordingly the fire of the fort was opened upon her. No return was made from her guns, from which circumstance some suspicions arose that after all she might be no enemy. However, by the dusky light she was seen drifting away from her position, and we ceased firing. Things remained in this condition till the morning, when it turned out that her cable had been cut by the shot, and that in consequence she had drifted on the rocks. But it was mortifying to the old governor to find that he had been firing at a friend all the time. The fact was, that the poor vessel had been detained by their own squadron, and she eventually became a total wreck.

When the observations had been completed, and while the Chanticleer was detained for the rates of the chronometers, a party of officers from the Adventure, the Sapphire, and our own vessel, obtained a week's leave of absence

to go into the country with one of the merchants of Monte Video. We were obliged to go by the river, as it was considered very doubtful whether we could perform the journey by land, on account of the war. It was therefore agreed that our friend the merchant should get a boat from one of the vessels in the harbour. We started one fine morning before daylight, having provided a full proportion of powder and shot for each, intending to deal destruction among all species of the feathered tribe. We were strongly recommended, before leaving Monte Video, to keep a respectable distance from the shore, as the patriot troops were very fond of having a flying shot at any boats that might be passing up. We got on very well to the point of the St. Lunaire river, a considerable distance on our journey, when our friend espied two boats with about sixteen men in each; knowing the sort of fellows these people are, he immediately assured us they were suspicious fellows; that they were composed of people of all nations, and cared not what depredations they committed. Considering our party, with all our arms and ammunition, too weak for them, he strongly recommended us to be very

civil, and at once told us to make up our minds to the loss of our fowling-pieces, if indeed nothing worse should happen. But we were not inclined to part with them so easily; and each of us quietly getting a ball ready in case of necessity, determined to give the strangers a warm reception, notwithstanding all the fears and remonstrances of our worthy friend the merchant, who was for peace on any terms. We mustered about thirteen barrels, for most of us had double barrelled-pieces, and were much entertained by the alarm manifested by our friend as we gradually approached the boats, expecting a shot from them every minute; but all our suspicions were groundless, for as we came near enough, we observed nets hanging over their sides, and I need hardly say they proved to be fishermen.

We arrived at our destination, and found an old Spaniard, a friend of the merchant's, at whose house we were to reside during our stay there, ready with a cart to take our baggage. The boat was moored, and we marched towards his house: when we arrived there, we found one room had been set apart for us. In the course of our stay at the Spaniard's, we found it very

difficult, at first, in going about by ourselves, as the country is one immense plain without any mark to serve as a guide. On visiting the quinta of the merchant who had accompanied us, we found it in a very bad plight; the troops had driven their horses into the corn-fields and plantations, and all was gone to ruin. A few cows and horses had been left; but in consequence of the war then going on, so frequent were the demands for horses, that it was impossible to keep them. While we were there, a gaucho arrived, having with him three large balls of iron attached to leathern thongs. These have been often described, and are used by these people instead of the lasso. Being anxious, however, to witness their efficiency, we got him to throw them, and pointed to a particular branch of a tree which we wished him to strike, at about the distance of a hundred yards. The fellow deliberately whirled them three or four times round his head, and struck the identical spot with the greatest ease and precision imaginable. In this manner they take cattle; the balls being thrown at their legs, the thongs become firmly twisted round them by the force of the balls, and the animal

is thrown down immediately. The gaucho then makes up to him, and instantly cuts the sinews of his legs. These balls, however, are not so effectual or so certain in their operation as the lasso.

CHAPTER IV.

The town of Monte Video.—Miradors.—Cathedral.—Public Buildings.—Market.—Country carts.—Gauchos.—Females of Monte Video.—Sheep for Fuel.—Cruel mode of putting Prisoners to death.—Spirit of Gambling.—Imports and Exports.—Climate.—Pamperos.—Native Birds.—A Culprit executed.

THE town of Monte Video, or more properly St. Phillip, stands on a low tongue of land which forms the eastern side of a small bay on the northern bank of the river La Plata. The town is about three-fourths of a mile in length from east to west, and half a mile in breadth from north to south, and contains a population amounting to between six and seven thousand. It is considered as the key of the river, and as such is surrounded by fortifications, and regarded as an important military station. It belongs to the Banda Oriental, a small district of the Brazils, which has been the cause of much dispute between the rival powers of

Spain and Portugal. It is now under the protection of the Brazilian empire. Occupying so small a space as it does, the houses are necessarily closely built; the streets are in general straight, and, unlike many Spanish and Portuguese towns, are provided with pavements for foot passengers. Not so the roadway, for this at the best is in a disgraceful condition; the ruts, from want of care and attention, are in some places more than a foot deep; and the streets are in general only provided with a lamp here and there. The houses are mostly two stories high, and built of brick; they have no gardens, and merely a court-yard, the exterior of them being whitewashed. They are built after the Spanish fashion; and although, from the massive iron bars which disfigure the lower windows, they assume the appearance of prisons, they are nevertheless tolerable dwellings. The roofs are all flat, and their sides guarded by a parapet, for the purpose of being used as promenades, as well as for the ladies to arrange their favourite plants and flowers. They form, in fact, the resort of their inmates, who may be seen in the daytime, but particularly in the evening, lounging away their

time over coffee or cigars, or witnessing any spectacle that may be passing in the streets.

Here also the merchant, who is interested in shipping affairs, has his *mirador*, or look-out station, something resembling a watch-tower, where with his telescope he sweeps the distant horizon to the eastward, with many an anxious feeling for the safety or expected arrival of some vessel. These miradors, perched on the roofs of the houses, give a peculiar appearance to the town, but they afford a pleasant and airy retreat, and, considering the condition of the streets, are very desirable. House rent is fifty or sixty dollars per month. The shops display neither ornaments nor order, but are nevertheless abundantly provided with all the requisites for good living. European merchandise is sold at very reasonable prices, considering the distance it has been brought; and to the general integrity of the shopkeepers, principally Spaniards, I can advance my humble testimony.

The principal building in the town of Monte Video is the cathedral. It is a capacious and handsome brick building, rising proudly above the surrounding houses on the western side of

the great square, nearly in the very centre of the town. The devotional spirit of its founders had designed it for a magnificent structure, but the ruthless hand of war has checked its progress, and robbed it of its honours, for its present unfinished state bespeaks decay. It has a cupola and two towers; the former, being roofed with good plates and dishes of Staffordshire blue ware, has an odd appearance. They are intended, no doubt, as a substitute for the Dutch tile; the idea is said to have originated with Artegas, a native chief, and the effect altogether is not amiss. The interior of the cathedral presents nought but bare ungarnished walls; no first-rate paintings are seen; and in the true spirit of humiliation, human skulls are conspicuously placed in different parts of the aisles and the pavement, as solemn and impressive monitors to hush the "laugh of life." Some of these were particularly conspicuous near the confessor's chair, aptly enough placed to prompt repentance in the bosom of the guilty. No splendid crosses ornamented with silver and gold, and lighted up with stupendous waxen candles, are found here; but in their stead, the larger skeleton bones of man cross

each other in various parts of the building and pavement, whitened by age. Such are the relics with which the clergy have decorated their altars; whether their taste is good or not in this display, I shall not venture an opinion. The organ is by no means good, and altogether too small for the size of the building. I happened to look in during service, and was struck with the difference between the appearance of the interior, and that of the gaudy ornaments of those in other countries. The females were squatted on their rugs in the side aisles, while the men were seated on chairs and benches in the middle, and the whole scene was impressive and pleasing.

Monte Video has no public building of any particular beauty or interest. In the square, and facing the cathedral, is the cabildo or town hall, where public business is transacted: there is a miserable theatre, barracks, and a prison; and the market, which is held at an early hour every morning in an open area at the western end of the town, is tolerably well supplied with the produce of the country. Large quantities of snails are sold in the market, and are used for making soup. In this square also, the Por-

tuguese troops are paraded, both in the morning and evening, attended by a tolerable band.

Destitute as the town of Monte Video may be of objects calculated to excite attention and interest, the adjacent country by no means makes up the deficiency. The walls of the town are no sooner passed, than a scene of disgusting filth presents itself, consisting of the carcasses of horses, and a variety of bones in a state of putrefaction and dead cattle, on which hungry dogs and pigs are feasting with savage delight: the odour from these is intolerable, and quite sufficient to spoil a walk which a stranger might be inclined to take.

If the people of Monte Video are behind some civilized countries in point of attention to cleanliness, the grotesque vehicles intended as carts or waggons will by no means advance their character for the cultivation of the arts and sciences. These primitive vehicles baffle all description, and belong to ages which have long since gone by; but nevertheless the country people retain them with all the regard that their forefathers had before them, and set all improvement at defiance. The floor or bottom

of the cart is formed of ponderous, misshapen pieces of timber; the carriage pole is also of equally huge and unwieldy dimensions. The sides of the cart are formed of rough stakes, lashed to the flooring by thongs of hide; and the wheels are remarkable for two good qualities, viz. large dimensions and strength, being about eight feet in height. To this vehicle are attached four, and sometimes six fine bullocks in pairs, not yoked, but fastened by a heavy transverse spar resting on the back of their necks, and bearing their heads by its enormous weight to the ground. The harness is formed of hide, and this material is also sometimes applied to covering the cart. Those carts which are intended for expeditious travelling, are furnished with mules instead of oxen, mounted by a grotesque-looking rider. An equipage of this description, attended by the country people in their strange habiliments, presents a scene which is calculated to excite pity at the state of ignorance which it displays. Mules are used for light draught, and carrying packages, and horses also, for the people make no scruple of fastening a load to

their tails. Such a thing seems almost incredible, but my own observation warrants my stating the fact.

It is related by historians, that the natives of America, when they first beheld the Spanish cavalry, believed that the horse and his rider were one individual, and the appearance of a gaucho, or country peasant, on horseback, would even now justify such a conclusion in an uninformed mind. The gaucho does everything with his horse, and seems to be a mere nobody without him. He is for ever on horseback, which may in some degree account for these animals being exempted from drawing their carts. If they want anything from the most trifling distance, they mount their horse for it; they sow their grain on horseback, they carry their dead to the burying ground on horseback, and they have been even known to go begging on horseback. It may be readily imagined from this, that they are good horsemen, and really deserve the good character they bear in this particular; but they are by no means so careful of their animals as might also be supposed. The Arab is proud of his horse, but the gaucho of Monte Video has no such feel-

ing. When he stops at any resting place on a journey, he ties his fore-legs together and lets him shift for himself as well as he can, knowing that in this condition he can always catch him by means of his unerring lasso. The gaucho wraps himself in his poncho, and lays himself on the ground with his saddle for a pillow. He is regardless of laying in a store of provision, for with his lasso he can at any time take a bullock and satisfy himself with his flesh. He cares not for bread,—animal food is all he requires. I have been informed from high authority, that in order to cook the bullock after he has been killed, a part of the animal is used as fuel, so great is the deficiency of this article in the extensive plains called the Pampas.

The dress of the gaucho is becoming. His complexion is a swarthy brown, his hair is generally black and long, sometimes platted and surmounted by a small-brimmed neat-looking hat. His shoulders and body are concealed by his poncho, which hangs gracefully round him, and by the variety and mixture of its colours, in which bright scarlet and yellow are sometimes particularly conspicuous, adds much

to the general effect. It descends only low enough to leave the fringe of his white trousers conspicuous over his feet, which frequently are uncovered either with shoe or stocking. Thus attired he makes an odd appearance on his horse, sometimes with his Dulcinea behind him, and accompanying some favourite madrigal with his guitar in the true spirit of chivalry and romance.

The population of Monte Video is chiefly of Spanish descent: the females are rather short in stature and of a pale complexion; but their countenance bespeaks intelligence and animation, to which their jetty sparkling eyes contribute not a little, and their general demeanour is remarkable for gracefulness and elegance. They are particularly fond of dancing, in which they certainly excel; and it is not uncommon to see a child of eight years old going through the intricate evolutions of a minuet with all the gravity and importance of a grandee, at the tertullas or evening parties which daily take place. There is an opera at Monte Video open on Sundays and Thursdays, that seems to be the only public amusement the place affords,

excepting in the summer season, when horse-racing is followed up with great spirit.

The country is in general flat; the mount on the opposite side of the bay being the only object which tends to diversify its character. Although it is entirely destitute of wood, the soil is good and well adapted to agricultural purposes; but such a deficiency is the source of much inconvenience. In their brick-kilns they burn bones, hoofs, and such other remains of animals. I have been even told by an old resident of Buenos Ayres, that he once sold a flock of sheep, amounting to two thousand, at 1s. 6d. per head, for the sole purpose of fuel for a brick-kiln. Their principal source of riches certainly consists in cattle; and in these extensive plains, bullocks, horses, dogs, ostriches, and game of different kinds, roam at large, feeding on the luxurious herbage. The oxen are a fine breed, averaging in weight from seven to eight cwt. The jerked beef is the only form in which the meat is preserved; but the hide answers many purposes to the gauchos: they convert it into bags, panniers, harness, ropes, the bottoms of chairs; and the skin of a

horse's leg, made soft and pliant by friction, serves the gaucho as boots. In the various uses to which they apply the hides of bullocks, that of punishment is not left out. It is related of them that they sew up their prisoners in a wet hide, leaving out the head and neck only, and in this condition lay them on the ground in the sun to dry. In the process of drying, which the hide soon does by the powerful effects of the sun, it becomes contracted, and produces the most excruciating torments on the unfortunate prisoner by the increase of pressure; but if night arrives before he dies from its effects, the hide relaxes again with the moisture from the air, only to prolong his suffering on the next day, which generally is his last. So cruel a death is even worse than that which the boa-constrictor can inflict; and the invention of it is said to belong to a barbarian named Ramirez.

The farms, or quintas as they are here called, are principally occupied by foreigners, and agricultural produce seems to be held in very low estimation by the natives. This no doubt arises from the unsettled state of the country, as the soil appears to be as favourable to indus-

try as that of any other country. The consequence is, that the people are dependent on other countries for flour and bread, which are generally obtained from the United States. But the people of Monte Video are not inclined to agriculture, and they inherit none of that spirit of exertion so necessary to this pursuit. It is too common to see them lounging about the *pulperias* or spirit shops, or in the suburbs of the town, employed in gambling. This is a vice to which they are sadly addicted, particularly the lower class, who literally carry a pack of cards about them, that they may try their chance with any one they meet on the nearest convenient stone. Such a demoralizing system is not without its consequences. Deadly feuds ensue, that are terminated with the knife; and this weapon, which every one carries about him, is too often used on the most trivial occasion. Poverty and beggary is common in the streets, and idleness is the predominant feature of the place.

The trade of Monte Video is very small. At the period of our visit, however, it enjoyed a fictitious importance from Buenos Ayres being in a state of blockade by the Brazilians;

in consequence, the trade was increased and the harbour crowded with shipping. The whole value of the imports from Great Britain to Monte Video and Buenos Ayres amounts to about one million pounds sterling annually; dry goods, coals and lime, are imported from England; flour, pork, fish, candles and soap, from the United States; wines, vinegar, brandy, fruit and mats, from Spain; and sugar, rice, coffee, tobacco, and cassada, are supplied by Rio Janeiro: in exchange for which they export hides, tallow, beef salted and dried, tongues, horns, horse-hair, and a few skins of the jaguan, besides tiger skins and chinchilla furs. Hides are a very precarious cargo, in consequence of their liability to become spoiled from the effects of damp or a worm which they generate. To avoid this as much as they can, they are not shipped during the summer months from October to March. It has occurred to me that washing them slightly with the liquor arsenicalis might preserve them from insects, without being expensive. The value of the hides are estimated at 1*l*. each, and the horns at one dollar per hundred.

Although cattle are so numerous as to form the articles of their principal export, and pasture land is abundant, fine milk is to be had only at five pence per pint, and butter at the enormous rate of 3*s.* 6*d.* per pound, and this scarcely to be obtained. Irish butter is imported, and to be had at two shillings per pound; but the quality of it is no recommendation. But neither the cultivation of the soil, nor attention to the dairy, falls within the compass of the farmer's duties in the Banda Oriental, in which province Monte Video is situated; no more than it is in that of La Plata, as some of our speculators have found to their cost. But, after all, it is a melancholy reflection that a country which would support millions of inhabitants, and become the granary of the southern hemisphere, lies neglected in its pristine condition. As a substitute for butter, the people of Monte Video use a mixture of marrow and beef-suet melted together, and preserved in bladders: it has a sweet and agreeable taste, but is very inferior to butter. As in other parts of South America, they also use the mattee, which is nothing more than the leaves

of the Paraguay holly, but is not so pleasant to the palate of an Englishman as his favourite tea from China.

The geographical position of Monte Video ensures it a temperate climate, but this is also fluctuating and tempestuous. It is much healthier than that of Buenos Ayres, and is totally free from those marsh fevers which are common at the latter place in consequence of its situation up the river La Plata ; in addition to which, the filthiness and abundance of animal putrefaction about the town produce no bad consequences. In winter, slight frosts are sometimes observed, but no snow has been known to fall at Monte Video. The mean temperature of the winter is about 55° ; that of the river water at the same time being the same. The weather, during spring, is very variable and liable to storms. In the summer and autumn it is sultry and oppressive, especially during the long calms which take place ; but in the middle of the day there is generally an agreeable breeze from the south-east. Northerly winds are accompanied by rain, and a south-east wind is frequently so ; but the wind from the south-west is most free from it. Violent gales are

common at all seasons of the year, attended frequently with thunder-storms, but these are most severe during summer and autumn. Sometimes the thunder-storms are accompanied by hail-stones of a considerable size, which not only break windows, but kill poultry; they often terminate in a pampero, the well-known hurricane of the country. It is said that in a pampero, sand and small gravel are blown on board the ships in the roads, a distance of seven or eight miles from the shore.

The following indications of a pampero have frequently fallen under my observation. The weather is sultry during a few days, with a light breeze from the east or north-east ending in a calm. A cool light wind then sets in from the south or south-east, but confined entirely to the lower strata of the atmosphere, while the clouds above it are moving in the opposite direction from north-west to south-east. The northern horizon, as night advances, becomes dark with heavy lowering clouds, accompanied with lightning from the east or north-east. The southern wind now ceases, and is followed by variable winds from the northward. Heavy clouds are thus brought over; and lightning,

accompanied by thunder, follows in a most terrific manner. The wind veers gradually to the westward in violent gusts, the lightning becomes more vivid, and the thunder more awful; a gale of wind follows from the southwest, more violent, but of short duration, and fine weather ensues.

These pamperos are very destructive to shipping, and frequently occasion wrecks and the loss of boats. The lightning is beautifully coloured, presenting the hues of orange, violet, and pink. I have also witnessed at Monte Video very remarkable instances of electric light, playing like the aurora borealis, at an altitude of 20 degrees above the horizon. One evening (the 4th of October) I observed, in company with Mr. Collinson, an arc of light which remained permanent with a tremulous motion for the space of twenty minutes; a strong gale of wind was blowing at the time: it was of a pale yellow colour, and flashes of lightning frequently appeared beneath it. Meteors or falling stars are very rare, and earthquakes are scarcely known here.

The birds of this part of the world are known by their beautiful plumage. The rhea,

or American ostrich, is common both in a wild and domesticated state, and may frequently be seen bounding over the plains with remarkable swiftness. This bird lays three or four eggs in the month of October, which are to be had in the markets, and are used for domestic purposes; they generally weigh about a pound and a quarter; and the country people make a custard of the yolk, which they bake in the shell among wood embers. Wild swans, vultures, owls, kites, hawks, parrots, wood-peckers, rose-breasted thrushes, and a variety of elegant finches are common, besides the *loxia cardinalis*, or cardinal bird, so called from a tuft of feathers on the head. Game is plentiful, and also fish.

While we remained at Monte Video, the execution of a culprit, who bore a most depraved character, took place. He was represented to have fled his country to avoid the punishment of a parricide, and that while he remained at Monte Video, his daring villany had rendered him a pest to society; for, although frequently detected, he had gone unpunished. At length his misdeeds brought him under the sentence of the law which he had so often broken with impunity. He was convicted of

having robbed and murdered a respectable citizen near the town in open day. When he was apprehended, he insulted the governor of the town, and when imprisoned he attempted the life of the jailor. For all this, it was with some difficulty, and no little reluctance on the part of the authorities, that he was condemned to suffer death. The man, with the most palpable effrontery, asserted his innocence, from which it would appear the difficulty arose; for the law requires either a confession of the crime, or proof by witness, not admitting the strongest circumstantial evidence. But the well-known baseness of the prisoner led his judges to pronounce the sentence of death against him, in the hopes that a confession of his guilt might be extorted from him, when he saw that his situation was hopeless.

The reverend fathers of the Church ministered to him, and, as the object of their mission, begged for his confession in vain. Days passed on in avowing his innocence on the altar; nor was it until the hopes of pardon and that he might live were held out to him, that he unfolded the catalogue of his crimes. Horror-struck at the enormity of his offences, the priest

left him, recommending penitence and prayer. The confession was sufficient; it was communicated to the authorities; and on the following day he was led to the great square, amidst a cavalcade of soldiers and priests. Arrived at the place of execution, he was seated apparently in an arm-chair, his head and neck resting against an upright post, his arms and legs were well secured, and a small iron collar was placed round his neck. Everything being ready, a turn or two was taken with a small winch, and the next moment he was suffocated. It appeared to be a quiet and sedate mode of death; not only were no convulsive throes observed, but it really seemed divested of all horror. Indeed it appeared to be considered quite an amusement to the numerous spectators, who chiefly consisted of women; for all of them were gaily attired to witness the spectacle.

CHAPTER V.

Depart for the southward.—Make Staten Island.—Bad weather.—Excellence of Frazer's stove.—Anchor off Cape St. John.—Meet an American sealer.—Moored in North Port Hatchett of Staten Island.—Description of the island.—Account of the Seal.—Various kinds, their nature and habits.—Penguins.—Albatross.—Scarcity of fish.—*Teredo Navalis*.—Remarkable *Medusæ*.—Reflections.—Climate.—Prevailing winds.—Harbours of the island.

THE pendulum experiments and other observations having been completed, and the Chanticleer having received provisions enough for ten months' use, we prepared for sea, and sailed from Monte Video on the 5th of October. A light breeze from the eastward favoured our departure; and although the water was tolerably smooth, the little brig, from being overladen with provisions, became very uneasy. In fact she was twelve inches deeper in the water than ever she had been, which obliged us to reduce sail, and to arrange the provisions on deck

amidships, clear from the sides of the vessel. This being done, she was considerably easier. On the 10th we were put on short allowance of water, as we had a long voyage before us towards the south pole, and it was uncertain when we might be able to renew our stock. On the 17th we experienced a severe gale of wind near the Falkland Islands, which obliged us to lie-to. On the 18th we saw the bleak and snowy hills of Staten Island, but there was too much wind for us to approach it, as we were ignorant of its harbours. We accordingly stood off, having sounded in one hundred and five fathoms.

The gale continued with unabated fury, accompanied with frequent showers of hail and snow, and the most terrific sea I ever witnessed in my life. This was Sunday the 19th, a day that I shall never forget. In the evening the wind shifted several points, which caused some uneasiness about the position of the shore, to which we were all entire strangers. The brig, however, was much relieved from the new arrangement of the stores, and behaved remarkably well, lying-to "like a duck," as the sailors termed it. In spite of their good opinions of

her, the night which followed was the most uncomfortable I had ever passed; for owing to the combined effects of excessive motion; the noise of the sea lashing the sides of the vessel, the howling of the storm, and a leak in my cabin over my bed, neither rest nor sleep could I get. The same weather continued throughout the following day, and it was not until the 24th that we again made Staten Island and stood in for Cape St. John.

It is in weather such as we had just experienced that the great advantage of Frazer's stove is found. The hatches had been battened down fore and aft; and yet in this condition, with a most furious sea running, no inconvenience from smoke was found, and our dinners were cooked to perfection. Certainly Mr. Frazer deserves the blessing of every sailor, for it is in situations where such comforts are most needed that they are most appreciated.

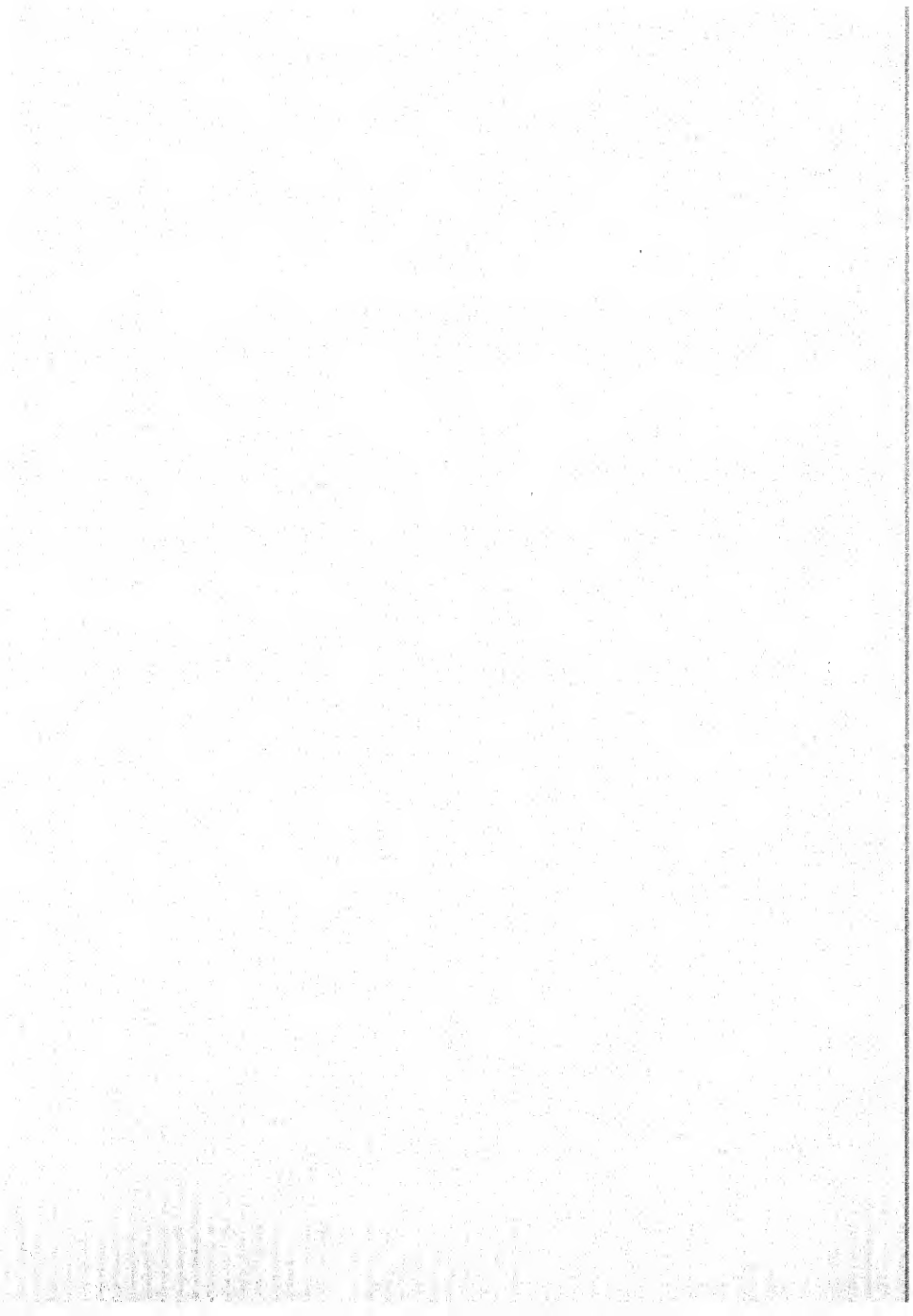
On Saturday the 25th of October, having kept pretty well in with the land during the previous night, we made sail before a gentle breeze, and anchored off Deadman's Island, on the north side of Staten Land; for though an island in itself, and not of very large dimensions either, it

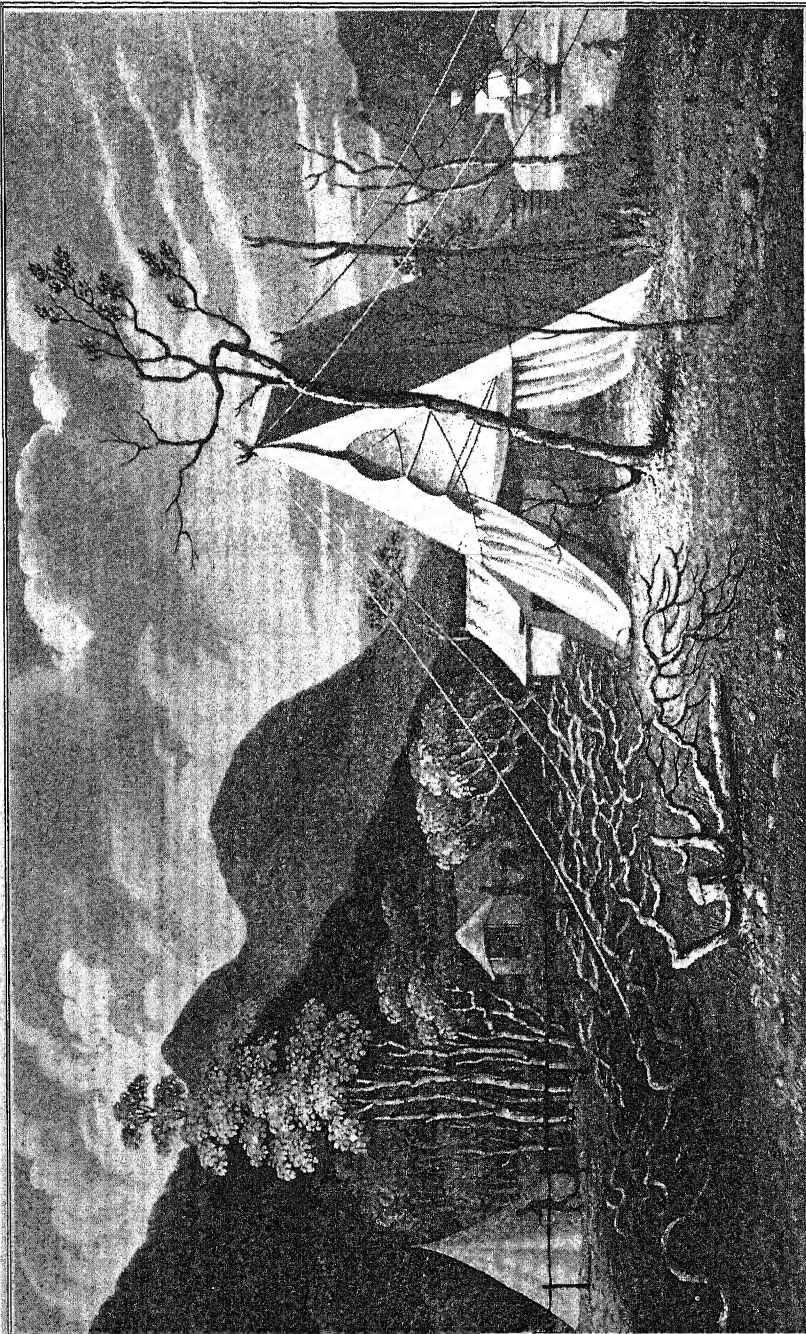
is called *Staten Land*. The morning was fine, cool, and pleasant; and to persons who had been tossed and knocked about in the manner that we had been for several days, the pleasure of anchoring in this solitary and secluded corner of the globe was as complete as if we had entered one of the first harbours of civilized Europe. It is true that there was no excitement here, no news to be learnt, no gaiety passing, no friends to visit, and what is worthy of consideration to persons who had been on salt provisions, no supply of fresh ones awaited us here: but as a refuge from the ruthless storm, as a resting-place from the incessant tumbling about we had so long suffered, the quietness and solitude of our new anchorage were sweet to our wearied frames; and, accustomed to our own resources, we were well disposed to look on the wilds before us with satisfaction, and to invest their novelty with additional charms.

Soon after we had anchored, a boat with an officer was despatched to Deadman's Island, and on her return we learned that every stone had a bird perched on it, that shell-fish were abundant, and that vegetation flourished; besides which, a duck or two having been shot by

one of the party, inspired us with the hopes of a fresh meal. Saturday night is always celebrated among sailors, and this was passed in cheerfulness and tranquillity far different to the preceding.

Early on the following morning, Sunday 25th October, Captain Foster left us, in quest of a harbour for the reception of the Chanticleer while the pendulum experiments were going forward. After examining New Year's Harbour, which he did not approve of, in his way along the coast he discovered an American schooner at anchor in one of the creeks; the name of the schooner was the Penguin of Stornington: and the reception he met with from Captain Palmer, who commanded her, was most kind. Captain Palmer immediately offered to conduct the Chanticleer into the creek, which he had named North Port Hatchett. When he made his appearance on board the brig with Captain Foster, we took him for another Robinson Crusoe in the shape of some shipwrecked mariner. He was a kind and good-hearted man; and thinking that they would be a treat to us, had brought with him a basket of albatross's eggs, which were to us a most acceptable





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J. Clark, Sculp.

Pendulum Station at Port Cook, Staten Island.

L. R. N. del.

present. How completely does this little incident, trifling as it may appear, prove the justness of Captain Hall's observations in his useful little work entitled "Fragments of Voyages," that it is the time and manner of making a present that gives it all its value !

On the following day, under the care of Captain Palmer, the Chanticleer was safely anchored in the beautiful little harbour of North Port Hatchett. The entrance to the harbour is narrow ; the shores on each side rise abruptly into lofty ridges of hills broken by glens, at the bottom of which is a watercourse ; the whole being profusely covered with evergreen trees, their dense and even foliage presenting the appearance of a well-trimmed lawn. Here and there were seen rugged peaks covered with patches of snow, from which numerous streams of water were rushing down into the bay. To us the peace and tranquillity which reigned in this sequestered little place was quite enchanting : a convenient anchorage close to the shore was selected, and we looked forward to pursuits of science and amusement with anxiety and satisfaction.

Staten Island is about thirty-four miles in

length from east to west, and its extreme breadth is about nine miles; but in several parts it is nearly intersected by deep bays. The general direction of these bays, which are very numerous both on the north and south sides of the island, follows that of the hills; which, being divided by valleys, allow the near approach of the sea on the north and south sides. The distance across it between the opposite shores of two bays in nearly the middle of the island is not more than nine hundred feet. The whole island thus assumes a most irregular shape, having a bold iron-bound coast and rocky points projecting into the sea. It is separated from the southern extremity of America, the famous Tierra del Fuego, by the straits of Le Maire, in which a dangerous tide-rip generally runs; and these are also found on the shore of the island, in many parts rendering its approach to vessels that are not aware of it both difficult and dangerous.

The general character of the island is hilly and precipitous; little or no level ground is seen; and nothing but a continuation of lofty hills, separated by narrow ravines, prevails nearly everywhere. We were fortunate in finding

at North Port Hatchett a small portion of level ground in the neck of land between it and the harbour on the opposite side of the island. This level is technically called by the sealers "the Haul-over," and owes its name to their practice of dragging boats across in their sealing avocations. The direction of the various ranges of hills is chiefly south-south-east and north-north-west transversely across the island, varying in their height from six hundred to two thousand two hundred feet. Many of them present a grand and imposing appearance. A scarlet lichen, which is very prevalent on their precipitous sides, affords a pleasing contrast to the dense green of the forest and luxurious vegetation which prevail on their sloping sides. The soil of the island in general is extremely loose and boggy, the upper surface of it being entirely composed of decayed vegetable matter, and covered with a profusion of mosses and lichens. Extensive beds of fine peat are found in profusion; it only requires to be cut and dried to form excellent fuel. There are several inland lakes in various parts of the island, from which numerous streams fall down the gullies into the sea. The scenery of the island is wild and

romantic in the extreme, and, rugged and uncultivated as it is, it is grand and pleasing. The view is limited; it is generally no farther than a few furlongs.

The geological structure of Staten Island consists chiefly of quartz rock, grey mica, clay, slate, and micaceous schist.

The vegetation of the island consists chiefly of beautiful evergreens, such as the antarctic beech, the winter's bark, and the elegant *arbutus aculeata*, the holly-leaved barberry, and a host of minor plants. These flourish on the island from one end of it to the other, but suffer in some parts of it, as they are more or less exposed to the cold winds. The prevailing tree is the antarctic beech. The head wood of this tree is generally unsound from the extreme dampness of the soil. It answered several purposes on board the brig, and we made a great quantity of excellent charcoal with it. The wood of this tree in a decayed condition undergoes a very remarkable change of colour in assuming a deep verdigris green, which was not affected by any acids or alkalies. It is not luminous in the dark; and, when ground into powder, it forms a very good oil colour. We

found vast quantities of the Fuegian rush, which has a large and elegant flower, and much resembles our common rush. But the Fuegian rush has some peculiar and valuable qualities which induce me to recommend it to the particular attention of agriculturists. It will grow in waste and boggy soils ; it is very strong, and the baskets and mats formed with it are little inferior in strength and durability to those of cane ; and it is not liable to crack and break. The introduction of this rush into England would give beneficial employment to our industrious peasantry in the manufacture of excellent baskets. The lower parts of the stem are very sweet ; and the rushes when dead have the flavour of hay, and would no doubt form good fodder for cattle.

Staten Island does not boast any great variety in the animal kingdom, and in the division Mammalia four subjects only can be found : these are the seal, the otter, the rat, and the mouse. The island has long been the resort of vessels in search of these former animals, and they have in consequence become considerably less numerous than formerly. The seal is valued for the soft downy fur which is formed

beneath the long hair; it is a large clumsy animal, with long awl-shaped ears, and five claws or toes on each flipper. The hunters of these unfortunate animals make use of technical expressions among themselves, by which they distinguish the two species. Thus the male fur-seals are called wigs by them, in consequence of their having a curly fur on the head; the males of the hair-seal are termed sea-lions, from their long shaggy mane, which gives them some resemblance to the monarch of the forest; and the females of both are familiarly called clapmatches, a term the derivation of which is explained in an extract which I have made, a little farther on, from Morell's voyages published at New York. The male seals are in general double the size of the females, so that they become the more valuable prize to the hunter. In examining the anatomy of these animals, I frequently found stones in the stomach; and, in one instance, I found between sixty and seventy good-sized pebbles. From this circumstance the question naturally presents itself, "Does the animal swallow these for the purpose of breaking up the small shell-fish which form a part of its food?"

Seals can endure abstinence from food for several months. They frequent the shore, for the purpose of bringing forth their young, in the latter part of the spring or early part of the summer; and again, in the autumn or fall of the year, to cast their coats. During this latter period they become remarkably thin, the blubber being all absorbed for the purpose of nutrition. The seal has only a single young one at a time, which the mother suckles with great care and affection for several months; and if her offspring is stolen from her, she expresses her sorrow most pathetically by tears and moans. The young seal is called a calf; and the specific name of *Phoca vitulina*, which it has received, would lead one to believe that the flesh of the little creature was similar to veal. But it is a miserable deception; and however luxurious a dish of seal's flesh may be, and no doubt is, to the hungry, half-starved, filthy Esquimaux and Fuegians, a meal of rancid blubber is by no means a repast adapted to a delicate stomach, unless inured, like those of the Cossacks and Tartars, to copious draughts of fish oil.

The hind flipper of the fur-seal is of a very

peculiar structure; in appearance it exactly resembles a large well-shaped hand, covered with a fine black kid glove, the fingers long and tapering. It resembles in mechanical structure the foot of the walruss, not holding by suction but by mechanical grasp alone. The fingers are connected by a web of strong fascia, which increases its capacity of extending over surface, and gives them a greater mechanical hold. These animals have the power of waddling along with the assistance of their flippers; they climb up rocky ledges with surprising dexterity, and cling to them with great facility. The heights from which they precipitate themselves without being injured, when they are pursued, is truly astonishing. The covering of their flippers is so strong and yielding that sharp-pointed rocks make no impression on them; and the force with which they dash themselves from one to another would fracture the bones of any other animal: the immense covering of fat or blubber which they have is ample protection, and they wallow and roll about with impunity. The flesh of the seal is of a dark colour, and loaded with this blubber; but in whatever way it may be cooked, or

however long it may be soaked, it is not unlike coarse beef steeped in any common lamp or fish oil. Being on short allowance of provisions, we were induced to try it, but the keenest appetite was not sufficient to overcome its filthy nature; and we could not resist throwing it from us in disgust, notwithstanding that the tongue is said to be very good when salted. I will here give Captain Morell's account of the nature and habits of this curious animal:

“The seals which resort to the islands of this archipelago, as well as to other islands south of latitude fifty, are generally clothed in jackets of valuable fur. This species has been distinguished by naturalists, merely for their size and shape; but there are other peculiarities connected with the history and habits of this animal, of a far more interesting nature, which I have never yet met with in print; a few of which I will endeavour to describe.

“In killing a female which happens to be with young, even in an advanced state of pregnancy, if the skull be pressed in by the sealing-club in dealing the fatal blow, an exactly similar indentation will frequently be found on the skull of the foetus. This fact is a practical illustra-

tion of the wonderful power of sympathy, and worthy the investigation of naturalists. Although modern philosophers have laboured hard to refute the idea of such a sympathy in the human race, there are hundreds of credible witnesses ready to bear testimony to its existence in this particular species of marine animals.

“ The striking disparity of size between the male and female is also worthy of remark. The large male is about seven feet in length, whereas the female never exceeds four feet. The large males are not the most numerous ; but, being the most powerful, they are enabled to keep in their possession all the females. At the time of parturition, the number of males attending one female is in the proportion of about one to a dozen ; a proof that these animals are the greatest polygamists in the world, not even excepting the Turks. That they are gregarious and social is evident to the most superficial observer who surveys their *rookeries*, where they herd together in classes, and at different periods.

“ Warmed by the cheering influence of an

antarctic spring, the males of the largest size go on shore about the first of November, corresponding to our May, and there wait the arrival of the females, which happens about the first of December. This of course is an annual assignation, and occurs as regularly as the migration of our northern shad from the ocean to the fresh-water rivers, for purposes perfectly analogous. As soon as the female seal makes her appearance at the edge of the beach, one of the most gallant of the males immediately takes her under his protection. It seldom happens, however, that he is not obliged to sustain his right by one or more serious combats with his rivals. While the males are fighting in the most desperate manner, the object of their bloody feud sits calmly looking on, contemplating the fray with apparent delight, and no little self-complacency. I have some reason to believe that the same feeling has been evinced by females of a higher species; but on this head I do not presume to speak positively: the seal battles I have seen, and studied the countenance of their object; who voluntarily yields herself to the conqueror as soon as

the contest is decided, at the same time casting a look of ineffable contempt upon his vanquished rival.

“ The proud victor now conducts his lovely prize from the late scene of contention up to the rookery prepared for her accommodation ; and this he does with a courtesy and tenderness of manner from which some husbands might derive a useful lesson. At almost every step he politely bows or nods to his new bride, and frequently touches her lips with his own. When the female has selected her lodgings, and become settled in the rookery, her partner is unremitting in his cares to afford her protection, and render her situation comfortable ; nor does she evince the slightest indications of jealousy while he is showing the same polite attentions to a dozen other wives ! Here, I believe, my former comparison does not exactly hold good.

“ By the last of December, all the females have accomplished the purpose for which they came on shore. In this process, however, they evidently endure a great deal of pain ; and the males appear to be much affected by their sufferings,—redoubling their affectionate atten-

tions, and adopting various expedients to relieve their distress.

“ The sense of smell, as well as that of hearing, in these animals is remarkably acute ; and for sagacity they are not a whit inferior to the dog. This latter quality, however, is more strikingly exhibited in their natural element than on land.

“ As a proof of their docility, I may mention, that I have taken two young pups, of two or three weeks old, taught them to feed, and kept them with me, as pets, for two or three months, in which time they became so tame that they would eat out of my hand,—expressing for me a great degree of fondness and affection, and soliciting my caresses in the bleating voice of a young lamb. I should have probably had them to this day, but some of the crew, whose enmity I had incurred by a proper adherence to nautical discipline, found occasion to destroy them both.

“ The fur-seal may be known from the hair-seal by its being of a much smaller size ; their noses are also smaller, and much more pointed. In swimming, likewise, they have a sort of jumping motion not much unlike that of

the porpoise ; frequently springing six or eight feet clear of the water, which is a feat the hair-seal never performs, except when excessively frightened, and even then seldom succeed in throwing their bodies clear of the water.

“ When these animals are for the first time visited by man, they evince no more apprehension of danger from their new guests than did the natives of San Salvador when first visited by the Spaniards ; and the confidence of the poor seals is requited in the same manner that theirs was,—by robbery and murder ! In fact, they will lie still while their companions are slaughtered and skinned. But they soon become acquainted with the barbarous character of their invaders, withdraw their ill-placed confidence, and avoid the fatal intimacy. They now acquire habits of distrust and caution, and devise ways and means for counteracting human stratagem and treachery. They select more solitary retreats, on the tops of rocks, beneath high projecting cliffs, from which they can precipitate themselves into the water the moment they perceive the approach of their arch enemy.

“ While encamped in their rookeries, three or four sentinels are always posted to keep a look-out while the others sleep; and the moment a boat makes its appearance, though it be a mile from the shore, these faithful watchmen promptly give the alarm, when in an instant the whole rookery is in motion. Every one makes for the surf with all possible expedition; so that by the time the boat reaches the shore, they will nearly all be in the water, with the exception of a few females that have pups or young ones to take care of. These will remain to defend and protect their charge until the last moment; when, if hard pushed, they will seize their pups by the back of the neck with their teeth, and dive into the surf, where they are obliged to hold the heads of the pups above water to prevent their suffocation.

“ The males, many of them, will also stand their ground, and fight very hard for the young seals; often till they perish in the noble cause. In different voyages to these seas, I have had more than fifty seamen very severely bitten in some of these contests; yet it seldom happens that a man gets bitten who is not

afraid of them : but the moment they perceive the slightest symptoms of fear or cowardice in their enemy, they begin to follow him up very close. When excited, their motions are very quick,—like the flash of a gun on touching the match : hence the name of *clap-match* which sailors apply to the female. In retreat or pursuit, their speed is nearly equal to that of a man, and much swifter on the rocks than could be anticipated from their appearance.

“ About the latter end of February the dog-seals go on shore : these are the young male seals of the two preceding years ; but owing to their youth and inexperience, are not yet allowed to attend the pregnant females or clap-matches. The purposes for which they now seek dry land are, to shed their coats, and give the new-starting crop of fine hair a chance to grow. By the first of May these objects are effected, when they again take to the ocean, and are seldom seen near the shores again until the first of July, when they appear and disappear alternately, without order or any ostensible purpose, for the period of a month ; after which they are seen no more until the first of September following. During this

month a herd of young seals, male and female resort to the shore; and when they retire again to their favourite element, the wigs, or large male seals, make their appearance on the land, for the purpose of selecting a suitable spot for their rookeries, where they are to receive the clap-matches, or females of age. This completes the annual round of visits made to the land by fur-seals of all classes. In high northern latitudes the same process occurs in the opposite season.

“I will now attempt to give a description of the sea-elephant, an animal of which the public in general have a very imperfect idea. The male of this species has a cartilaginous substance projecting forward from the nose, six or seven inches in length; and from this peculiarity has the animal derived its name, as its purpose seems to be similar to that of an elephant's proboscis. I have seen the male sea-elephant more than twenty-five feet in length, and measuring about sixteen feet round the body; whereas the female is never half that size, and in form resembles the hair-seal, which does not materially differ from the fur animal in shape, &c.

“ The male sea-elephant comes on shore the latter end of August; the female late in September, or about the first of October; her purpose, of course, to be delivered of a present burden. When the males first come on shore they are so excessively fat, that I have seen two from which might be produced a tun of oil; but after a residence of three months on the land without food, they become, as might be expected, very lean and emaciated. About the middle of December, their young being old enough to take the water, the whole breeding herd leave the shore, to follow where instinct leads among the hidden recesses of the deep. About the first of January the brood of the previous year come on shore to renew their coats; and in the middle of February the full-grown males and females do the same; and by the first of May they have all disappeared, both old and young.

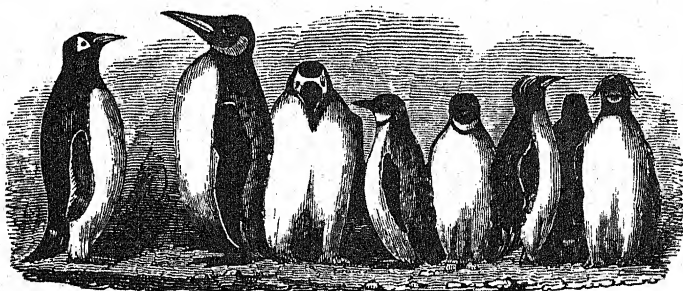
“ From the fact of these animals living so long on shore without food, I should infer that they can derive sustenance by absorption during this period,—consuming the substance of their own bodies. Hence their extreme emaciation at the time they return to the

ocean. There is a striking contrast between their clumsy, sluggish motions on land, and their agility and sagacity in the water. Unlike the fur-seal, the sea-elephant seldom runs or fights; but when the club is aimed at his skull, or the lance at his heart, he merely raises a supplicating look to his murderer, while the tears overflow from his eyes, and then awaits the death-stroke with martyr-like composure. But were he conscious of his own powers, or were his courage equal to them, the assailant would probably get the worst of the bargain. Unwieldy as his form appears, should he rush forward, and compel his enemy to come to close quarters, human skill could avail little against the astonishing power of his jaws, which in the agonies of death will literally grind the hardest stones to powder between his teeth.

“It is a remarkable fact that the sea-elephant has never been seen in the water by any navigator more than thirty rods from the shore. I have seen them come up to take breath within half a cable’s length of the beach; but even then they only allowed about half an inch of their nose to come above water.”

Penguins are a singular race of amphibious

birds, plentifully found on Staten Island. They form the only genus of the feathered race that are there, and live in the water like the seals. Instead of wings, they have strong flippers which assist them in swimming, but which afford them no means of flying. The following is a sketch of some of these curious birds as they congregate together.



Their feathers are very different from those of other birds, being short, very rigid, and the roots deeply imbedded in fat; they are in general flat and bent backwards, those on the breast being of a satin or silky white, and those on the flippers so short and small as to approach the nature of scales, overlaying each other very closely. The skins of penguins are loaded with fat, and are not applicable to any purpose with which I am acquainted. Their feet are

not regularly webbed, but present a broad fleshy surface more adapted for the purpose of walking than swimming. These birds, when strutting about on shore with their waddling gait, their erect posture, and their coarse voice, have a very curious and uncouth appearance. Old Sir John Narborough, seeing a row of them standing on the shore, quaintly enough compared them to a company of little children with their pinafores tied on. These birds generally live at sea, except in the spring, and during the time of incubation, and when they moult in autumn. I have seen them at the distance of two hundred miles from the land, swimming with the rapidity of the dolphin, the swiftest of fishes. They come up to the surface every two or three minutes for fresh breath; they make a croaking noise, dipping their beaks frequently into the water, and playing and diving about near the surface like the bonita. They pair early in the spring, and come on shore loaded with fat and in good condition; they lay their eggs on the ground, excepting one species vulgarly called the jack-ass penguin, which lay them in small tufts of grass. Penguins have great powers of

abstinence, and are able to live four or five months without food. I have occasionally found stones in their stomachs; but they generally live on shrimps and crustacea, gorging themselves sometimes to excess. They are easily captured. When pursued, they run and jump with all their speed towards the water. Sometimes they throw themselves on their breasts, and propel themselves forward by means of their fins to elude the pursuit of hunters. They are very tenacious of life, and will undergo a beating with a bludgeon a long time; and even when to all appearance they may be dead, they will afterwards revive again.

The albatross (*diomedea exulans*) is an elegant and magnificent bird, and may be justly called the sea swan. We shot several specimens off Deadman's Island, at the mouth of the cove, one of which was three feet in height, and ten feet in the spread from wing to wing, and weighed fifteen pounds. The feet of these birds are of a fine, delicate, webbed structure, large and expansive, and well adapted for swimming or alighting on the surface of the water.

The bays of Staten Island are not stocked

with fish ; although Lieutenant Kendall, who surveyed the island, met with mullet, and his Majesty's ship *Adventure*, while at anchor off Deadman's Island, caught some. We could find none whatever, although being on a reduced allowance of provision, we tried hard to catch some. Clams afforded us many excellent meals, and muscles we also found of a gigantic size.

The rocks of the island are clustered with shells, and abound with muscles and limpets. The latter are extremely numerous ; some are handsomely veined like the tortoise-shell, and others are of a beautiful pearly lustre. I was never tired of looking for limpets, for every day afforded me a different species, every rock furnished me with a new variety. The flesh of the limpets is very hard and indigestible, and stewing them produces little change in it. They form an inexhaustible supply of food for birds. The clam-shell of this island buries itself very rapidly in the sand when disturbed : indeed it is quite astonishing to observe the celerity with which it disappears.

In using the dredge we frequently brought up pieces of wood, bored in every direction

and filled with the teredo navalis; the holes were large, perfectly cylindrical and smooth, and sufficient to admit an ordinary tap-cock. Having obtained a piece of wood in which these workmen were following their destructive employment, I am enabled to give the following description of one from my own observation.

The teredo navalis is a worm varying in length from two to six inches, and from a quarter of an inch to an inch in circumference. It is of a pale white colour, being smooth and not annulated. The anterior extremity has a slender, double, extensile, cleft proboscis, or mouth-piece, which the creature has the power of thrusting forward to a considerable length from it. This proboscis is of a flesh colour and is finely pointed.

From the neck or anterior portion of the body proceed two pennated processes, which are firm and long, well articulated, and about two inches in length. These consist, first, of a footstalk, or pedicle, firmly implanted into the sides of the worm, and the other half terminated, secondly, by a plano-convex doubly-feathered edge. The structure of these feather-

ed processes precisely resembles the bone of the cuttle-fish.

The tail or posterior extremity of the worm has a helmet-shaped shell, the tube of which is open at the anterior part and frequently double. This part of the tube is also much smaller than the posterior end. The end of the tube contiguous to the bivalve shell of the worm, is always closed by a shelly process, and is consequently impervious. The plane surfaces of these feathered borers are applied together, and by a semi-revolution works at first a small hole, till, getting gradually larger, the whole feathered process enters. It resembles in some measure a very fine double-edged saw working by half turns as it destroys the wood, and thrusts forward its tubular mouth-piece, which lies retracted between the bases of the feathered borers. Thus removing the result of his labours, and clearing his way as he proceeds, he provides himself with food. The feathered processes are always found towards the recent work; and frequently he makes himself a small canal with each borer separately, and ultimately he brings them into one. Having thus formed a dwelling, as it were, for himself, he lines it with

a strong exudation, and thus securing himself in his retreat, he makes a sarcophagus of his dwelling, but he is not fixed to any part of his shelly tube. It is frightful to contemplate the destructive ravages which these creatures are capable of committing on ships; they would soon scuttle a first-rate man-of-war. And it would appear, from their abundance in these seas, that it is not the cold temperature of the water on our shores, as has been asserted, that prevents their being found on them.

Much difference of opinion, I find, has prevailed respecting the manner in which these worms bore their cells; most authors stating that it is done by the valvular shell at the posterior end; some, with Sir Everard Home, have considered this as a double-nosed auger, others as a centre-bit, and others again have attributed this power to a secretion from the body of the animal acting on the wood so as to soften and decompose it. In my opinion this latter supposition is altogether untenable, as the animal exhibits proofs of mechanical workmanship, and its structure supplies it with the means. For my part, I would reverse the mode altogether, and conclude that the feather-

ed processes are the borers, than which nothing can be more admirably adapted to such a purpose.

While I am on this subject, I may advert to some other burrowing and boring marine animals. Although it has been lately attempted in the Philosophical Transactions to controvert the idea that the *saxicava myosus* and *mytilus rugosus* of Linnæus effect this purpose mechanically, and to show the probability of their doing it by the agency of a chemical solvent, there can be no doubt that the old opinion is correct with respect to them as well as the *lithophagi*.

In the early part of December, the water in the harbour where we were lying was covered with medusæ, and on the following night the most brilliant illumination in the water ensued. In size these medusæ varied from one to eight inches long, and were bell-shaped or like a mitred cone, but frequently assuming different figures. From the edges or rim of the cavity, a loose flocculent membrane, which very much resembles a delicate gauze net, was spread to catch its prey. On the external convex surface of one of these medusæ, which I examined,

were eight longitudinal rows of small imbricated processes slightly curved, which acted as a series of little flippers, for they had the power of rapid motion, and they appeared like the delicate cogs of a small wheel. On examining this medusa, I found that when it was desirous of moving itself, several or all of these rows of flippers were put into motion. I became so much interested in the beautiful although minute organization of the little creature, that I could not help attentively watching it for some time; and it was highly gratifying to see the little fellow propel himself forward rapidly, by putting his oars, if I may so call them, into motion, and as suddenly stop himself when they ceased, and turn himself with ease, by working his oars in contrary directions. The motion of his oars imparted to them a succession of the most beautiful colours I ever witnessed: the deep bright emerald green, the beautiful rose colour, gold and crimson, blue and purple succeeded each other in rapid alternation while it lasted, and riveted the eyes of the beholder with their no less graceful motion. The moment, however, that this motion ceased, no change of colour was

perceptible. I could not help thinking, as I contemplated the elegance of the little creature's shape, its rapid and yet graceful movements, and the beautiful colours which they produced, that it would be a splendid ornament for the drawing-room table ; for it is decidedly one of the most beautiful objects of the creation. The skill and wisdom displayed in its mechanical structure are admirable, its flippers move like the paddles of a steam-boat obedient to will ; and yet this creature is placed by naturalists in the lowest scale of organized nature, and is regarded as being without a sentient principle, without muscles, and without a brain, the great organ of volition. But there are more secrets in nature than are dreamed of in philosophy.

In a distant and uninhabited island like this, it would appear, at first, difficult to find anything worthy of attention. But a close observer of nature need not go farther than these shores to find ample subjects for contemplation. Often on days of calm and fine weather have I frequented the shore at low spring tides, and fondly searched the sequestered pools of sea water and the retired caves for whatever they might yield ; and in the midst of their still soli-

tude I have sat in silent contemplation of the wild scenery around me, till startled from my reverie by the encroaching waves of the returning tide. It is a glorious sight to observe the fecundity of Nature, and the boundless profusion of the Almighty's works, which gives to every drop of water its appropriate being ! All teems with existence, and is crowded with inhabitants. Reflections such as these fill the mind of man with wonder and awe ; the subject becomes overwhelming, and he acknowledges with gratitude and humility, that " the earth is the Lord's, and the fulness thereof ;" and the most intelligent inquirer soon reaches that limit where " fancy droops," and " thought astonished, stops her bold career." The general effect is beautiful in the extreme ; for the transparency of the water heightens the colours, and gives the various objects in it an adventitious charm and lustre, which they lose, in a great measure, when they are removed from the mirror in which they have been set by Nature for our admiration. Truly may we say with Montgomery,

" There's not a particle in sea or air,
But Nature owns thy plastic influence there.

With fearful gaze, still be it mine to see
How all is filled and vivified by Thee ;
Upon Thy mirror—earth's majestic view,
To paint Thy presence and to feel it too."

The climate of Staten Land is remarkably humid ; and very few days can be passed there, in the course of the year, without rain ; and it is rather remarkable, that however fine the weather may have been in the course of the day, some rain generally falls at night. Rain, however, is frequent there in all seasons of the year ; the sky is generally overcast. Thunder and lightning is scarcely known there. In point of temperature, it may be considered as equally low, and varying little throughout the year. Frost is not very severe nor very common in winter, and the snow does not lie long on the low grounds. The weather during summer is cool, but still humid ; and, as a general character, may be considered boisterous, unsettled, wet, and dull. Vegetation lingers slowly in its summer's bloom, and is not nipped by the severity of the winter's frost. During our stay, from 25th October to 21st December, the following were the prevailing winds :

	Days.		Days.		Days.
North . .	$1\frac{1}{4}$	South . .	$0\frac{1}{2}$	Calm .	2
North-east	$0\frac{3}{4}$	South-west .	3		
East . .	0	West . . .	4		
South-east	0	North-west .	$7\frac{1}{2}$		

On shore the weather was a few degrees warmer than on board; and at night it was colder. The most retired harbours of the island are not frozen. The wind is generally from the westward, nine days out of ten ranging from south-south-west to north-north-west. Gales from the south-west prevail during the summer, and from the north-west in winter. Easterly winds are most prevalent in winter months.

During the stay of the Chanticleer at this island, a survey of it was made by Lieutenant Kendall, while Captain Foster was employed in carrying on the experiments with the pendulum, which formed the express object of our visit. The following extract is taken from his remarks respecting the island in a nautical point of view :

“ The harbours of Staten Island are, with one exception, confined to its northern side. They are St. John’s Harbour, Port Cook, New Year’s Harbour, Basil Hall Harbour, Port

Parry, Port Hopner, and Port Vancouver. There are also two or three small bays in the strait of Le Maire; but they are rendered unsafe by their exposure to the prevalent westerly winds. All these anchorages, though well protected when once gained, are nevertheless more or less difficult of access, from the force with which the tides set across the entrance, the depth of the water, and the variableness of the wind, which in every instance, except that of immediately blowing directly out of the port, finds its way down the ravines of the mountains, in various directions, according to their peculiar formation."

While at Staten Island, we were reduced to two-thirds allowance of our sea diet. But by killing a duck occasionally and obtaining clams, and by using the berries of the arbutus for tarts, the wild celery in soup, and the stems of the large tussucks as a substitute for asparagus, we promoted our health.

CHAPTER VI.

Departure from Staten Island.—Arrive at Wigwam Cove, Cape Horn.—Depart for New South Shetland.—First Iceberg seen.—Make Smith's Island.—Dirk Gherritz Land.—Whales.—Clarence Land.—Red Snow.—Beauties of an Iceberg.—Deceptive distance.—Proportion of the immersed part of Icebergs.—Their formation.

HAVING completed the objects of our visit to Staten Island, we prepared for sea ; and on Sunday, the 21st December, we made sail from the little cove, and steered to the southward, for the land of Tierra del Fuego. In leaving the cove, we were compelled by the light baffling winds that prevailed, to warp out, in which operation Mr. John Caught, the acting master, met with an injury which prevented him from doing his duty for some time afterwards. On our way across the strait of Le Maire, we fell in with the Pacific, a whaler returning homeward ; and on the 27th December, we made the bleak dismal-looking land of Cape Horn. The day was remarkably fine ; and the wind

favouring us from the eastward, we stood in to Wigwam Cove, and cast anchor. This serenity of weather was of short duration; for in the afternoon of the same day, we were visited by a tornado from the westward of the most violent description I ever witnessed, accompanied by heavy rain; and, after expending its force, it was succeeded by a gale of wind from the same quarter, which lasted two days. As we were destined to visit Cape Horn again after our return from New South Shetland, our proceedings here only extended to obtaining a few observations for our chronometers; and we put to sea again on the 29th of December, notwithstanding it was blowing a gale of wind from the westward.

On the 31st December, a large meteor passed over us from north to south, the westerly gale still continuing, although the barometer was high and rising. On the 2nd January 1829, we were in latitude 60° south at noon. The weather was fine, the wind being light from the east, the thermometer 38° . At noon we discovered a large iceberg a-head of us, which being the first we had seen in our present voyage, excited some curiosity on board. It being

calm, we tried for soundings with 900 fathoms of line, but found no bottom. Dr. Marcet's iron water-bottle and a Sixs's thermometer were sent down, by which it appeared that the lowest temperature of the water through which it had passed was 34° , the surface water at the same time being 39° . Between Staten Island and Cape Horn we had sounded several times, and always found a decreased temperature of a few degrees below the surface.

On the 3rd of January, we saw more icebergs. The weather was remarkably calm and fine. On the following day, a shoal of fin-backed whales passed us. Early on the morning of the 5th, we observed Smith's Island, one of the Shetland group. The fine weather of the preceding days had forsaken us, and we were now in the midst of snow-storms, which added not a little to the inhospitable appearance of the island. We were surrounded besides by icebergs; but as we had daylight and no night, we were enabled to thread our course among them. The island before us was covered with snow, excepting on the sides of the precipices and the faces of rocks, where it could not lie; and these from their black appearance present-

ed a striking contrast with the high snow-clad land.

On the 7th January, with fine clear weather, we were coasting along a tract of land, with a light easterly breeze, to the southward of the South Shetland group, and called by the sealers Trinity Land. This land had been seen by us for several days, for we had been embayed on it. It appeared to be of considerable extent, with mountains of six or seven thousand feet in altitude, running off from the coast and all of it was covered with eternal snow in its own primeval grandeur. Our situation was one of novelty and interest, and produced various speculations among us : some imagining it to be a southern continent extending to the pole, or a great and continuous tract of land ; while others concluded it to be a series of islands belonging to the Shetland group. At any rate it is the southernmost land known ; and in the Quarterly Review of 1825, we find the following passage respecting it :—" The land discovered by Dirk Gherritz, of the ' Good News' yacht, one of the five Rotterdam ships which doubled Cape Horn in 1599, and which he reported to be in 64° south, was considered to be a part of the southern

continent. It was marked out in most of the old charts by the name of Gherritz Land, till we expunged it. But this land now figures under the name of South Shetland, to the manifest injustice of the claims of the old Dutch navigator."

We were quite exhilarated by the fineness of the day and the scenery around us. Numerous whales were spouting up columns of water and blowing about us in all directions, making a noise not unlike that of letting off the steam from the boiler of an engine. As they came to the surface and turned majestically downwards, their place was marked by the smoothness produced by the oily surface. Flocks of variegated peterels, or pintados, were circling round it, and sedulously watching these leviathans of the deep, for the purpose of obtaining some sort of food or aliment from their slimy exuviae; and penguins innumerable were popping up their heads here and there, skipping and starting out of the water in the full enjoyment of their gambols. From the deck of the Chanticleer we counted eighty-four large icebergs about us.

In the afternoon of the 7th of January, a

favourable opportunity offering for landing, Captain Foster and Lieutenant Kendall went on shore, and deposited a written document in Latin, enclosed in a copper cylinder, stating that possession was thereby taken of the land in the name of His Most Gracious Majesty King George the Fourth. The point on which they landed was named Cape Possession, and is in latitude $63^{\circ} 26'$ south, and longitude $64^{\circ} 6'$ west, being the southernmost part of this land, which was named Clarence Land,* after His Royal Highness the Duke of Clarence, then Lord High Admiral of Great Britain.

The coast from Cape Possession takes a south-westerly direction, until lost to the eye on the horizon, where it appears to terminate in a mass of islands, which may possibly be only the distant summits of a continuous shore. Beyond the acquisition of mere geographical knowledge, this land appears destined to be of little account to man; it presents a bleak and dismal aspect, and is clothed in eternal snow. The ceremony of taking possession was not of long duration; and the party soon returned, bringing with them some limpets, and a

* Called Palmer's and Trinity Land in the charts.

large mass of rock which proved to be of binary granite or syenite,—it might by geologists have been more correctly termed milk-white quartz,—and hornblend dispersed in black crystals throughout the mass, giving it rather an elegant appearance. Some specimens of red snow were also brought on board by the party ; but I must confess that it did not come up to my ideas of that phenomenon which is found in the north ; and yet I examined it tolerably closely with a good glass, and paid much attention to this interesting subject only to be disappointed. It appeared to me to have been soiled by birds which had been nestling in it and feeding on shell-fish, some of which were brought along with it. I was very anxious to see the phenomenon of red snow ; but after every allowance for excitement, and a determination to make it so, I could come to no other conclusion than that the appearance proceeded from the fresh fæces of the penguins, which are of a very red colour from the nature of the shell-fish which form their diet.

On the 9th of January we made an island which appeared to be a desirable place, from its

position, for the observations for which we had visited these dreary regions; and accordingly it was determined to ascertain whether the island afforded the necessary harbour required for the vessel during the operations. The day was very fine and pleasant, the wind being light from the eastward, which obliged us to sail close-hauled to it, and to thread our way among the numerous icebergs by which we were surrounded. At length by about noon we approached the island sufficiently near for a boat to land, and Captain Foster proceeded to examine an opening while the vessel stood off and on under easy sail.

The examination occupied the whole afternoon. The weather being remarkably fine and the sea smooth, we had an excellent opportunity of witnessing the beauties of the surrounding icebergs, for it requires a brilliant sun and a light calm day to see them to any advantage; it is then only that the glowing descriptions which have been given of them can be realized, at other times they resemble mere floating mountains. A light air wafted us alongside of a small one, indeed we actually came in contact with it, and by means of spars

boomed it away from the sides of the vessel without her receiving any damage whatever. The height of it was about eighty feet, the sides of it presenting a surface of the most exquisite polish, surpassing even that of the boasted Parian marble; it was of a beautiful cerulean colour, perfectly translucent, with veins of an elegant verditer. In fact the whole was splendid and magnificent, and its variegated colours afforded us a treat which it was worth coming even to South Shetland to witness.

Much has frequently been said about the grand and imposing appearance of icebergs; and the fantastic shapes of these floating mountains, gilded by the glorious rays of the sun, together with their enormous magnitude, in part justify it. It is not often, however, that the sun shows his face here; and when he does not, they lose all their borrowed splendour, and appear nothing more than huge masses void of interest to the spectator, except as objects of danger. The "fairy palaces with glittering domes," which fancy pourtrays in their rugged forms, vanish with the departure of the frost and the sunbeams which "give them birth."

We saw some very large icebergs in the course of the day, many between two and three hundred feet in height, and double that in extent. One that we subsequently saw was estimated at two miles in length, and between three and four hundred feet in height; but they are frequently magnified by the delusive medium of the hazy atmosphere through which they are seen. Sir Edward Parry, in one of his northern voyages, makes an observation on the subject of this deceptive appearance in the following terms: "We had frequent occasion to remark the deception which takes place in estimating the distance and magnitude of objects when viewed over an unvaried surface of snow. It was not uncommon for us to direct our steps towards what we took to be a large mass of stone, at a distance of half a mile from us, which we were able to take up in our hands after a minute's walk." It is much the same with some icebergs; and these, with the birds upon them, as they sail along before a light breeze, generally appear larger than they really are.

But if the magnitude of some of these icebergs produces astonishment in the beholder,

how much would this be increased, when we consider that only one-seventh part of them may appear above the surface of the water! Thus an iceberg two hundred feet high above the surface, may have fourteen hundred feet below it, making a total height of sixteen hundred feet! This conclusion has been formed from experiments in the north, made with solid cubic pieces of ice; but it is one that cannot hold good entirely with icebergs, because they are far from being cubes, and must in consequence of their varied forms have much less weight above water, and consequently will not float so deep. Having made some experiments of this nature, I deduced from them that in cubic pieces of ice one-seventh part only remained above the surface of the water. I also placed a cone of ice on a cubic piece from the same iceberg, and found that the cube easily floated and sustained the little pyramid, the height of which was more than double the depth of the cube below the water. I also floated irregular-shaped masses, and found their heights above the surface to vary considerably; in some it was equal, in others greater than the depth below it; proving that no inference can

be safely drawn as to the depth to which an iceberg extends from the surface with reference to its height above it, and that all depends on its form.

In corroboration of this I may further observe, that while we were in contact with the iceberg off the island, we determined its height by a reference to the vessel's masts to be not less than fifty feet. Now this would have required a depth of three hundred and fifty feet to float in, according to the conclusion deduced from a cubical piece; but it was floating in ninety-six feet; for we obtained soundings at the same time with sixteen fathoms of line.

Icebergs are justly termed marine avalanches, and are formed in deep ravines, being a collection of snow and ice accumulated in some sheltered precipice. In course of time the part next to the precipice becomes melted, and it is launched by its own weight with a prodigious crash into the sea beneath it.

CHAPTER VII.

Deception Island.—The Chanticleer moored.—Comparison of Scenery.—Formation of the Island.—Hot springs.—Jack's comparisons.—Birds of Deception Island.—Climate.—Its preserving nature.—Aurora Australis.

IN the course of the evening Captain Foster returned on board, having found a cove in the interior of the island which he considered would afford sufficient protection to the vessel; and we accordingly directed our course for the entrance. As we proceeded through the narrow passage which forms it, and is about six hundred feet wide, the scene before us was that of a dreary and gloomy waste covered with penguins innumerable, the noise of which was not unlike the distant bleating of folded flocks of sheep. The contrariety and admixture of colours, and the strata of tufa, with the black ashes and the snow, were striking. On the northern side of the entrance, a single rock about thirty feet high stood conspicuous by

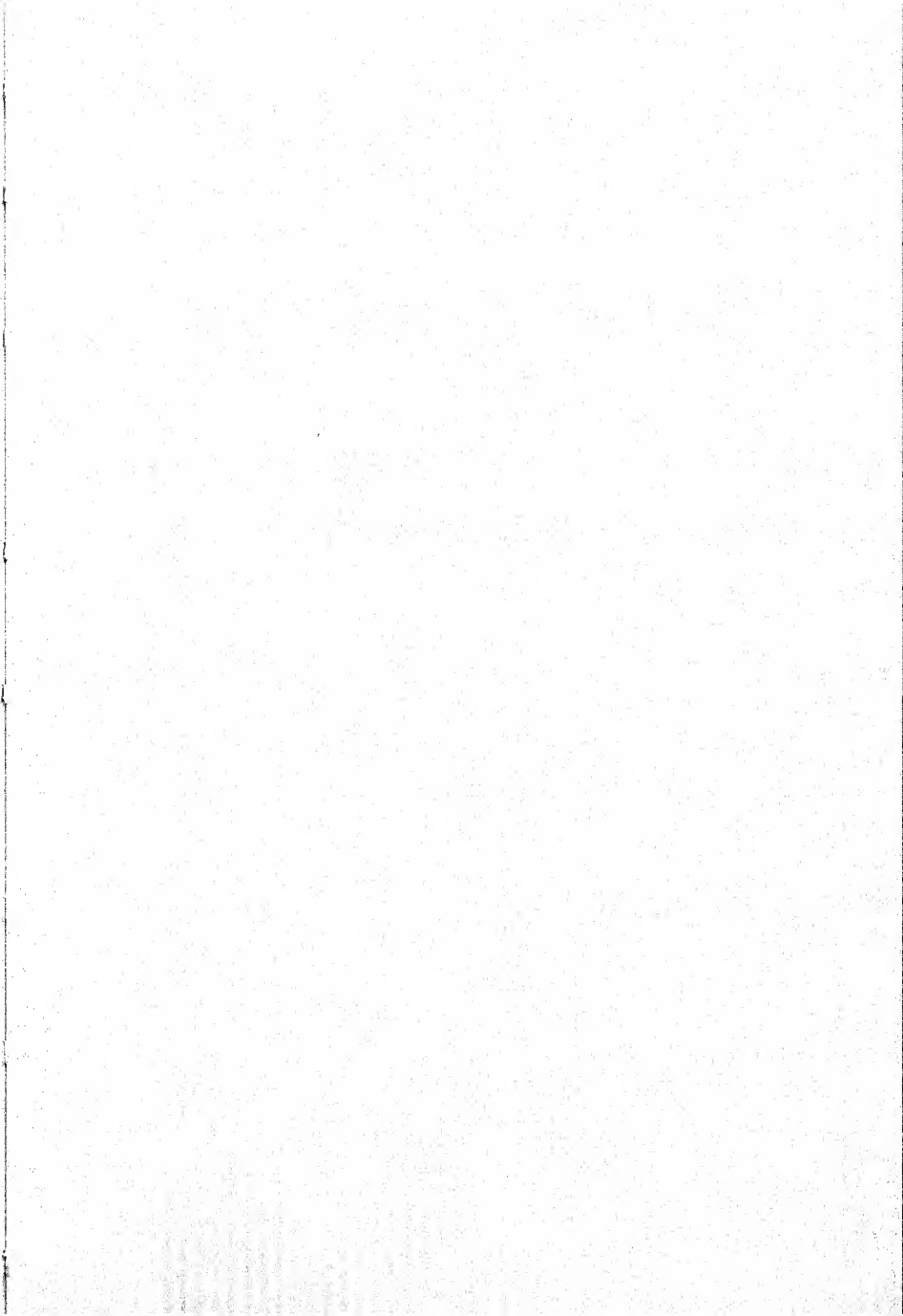
itself; and from the resemblance which it bore to a cock, excited the attention of us all. The attitude was that of outspread wings; and we could not help naming it at once the "Chanticleer" Rock.

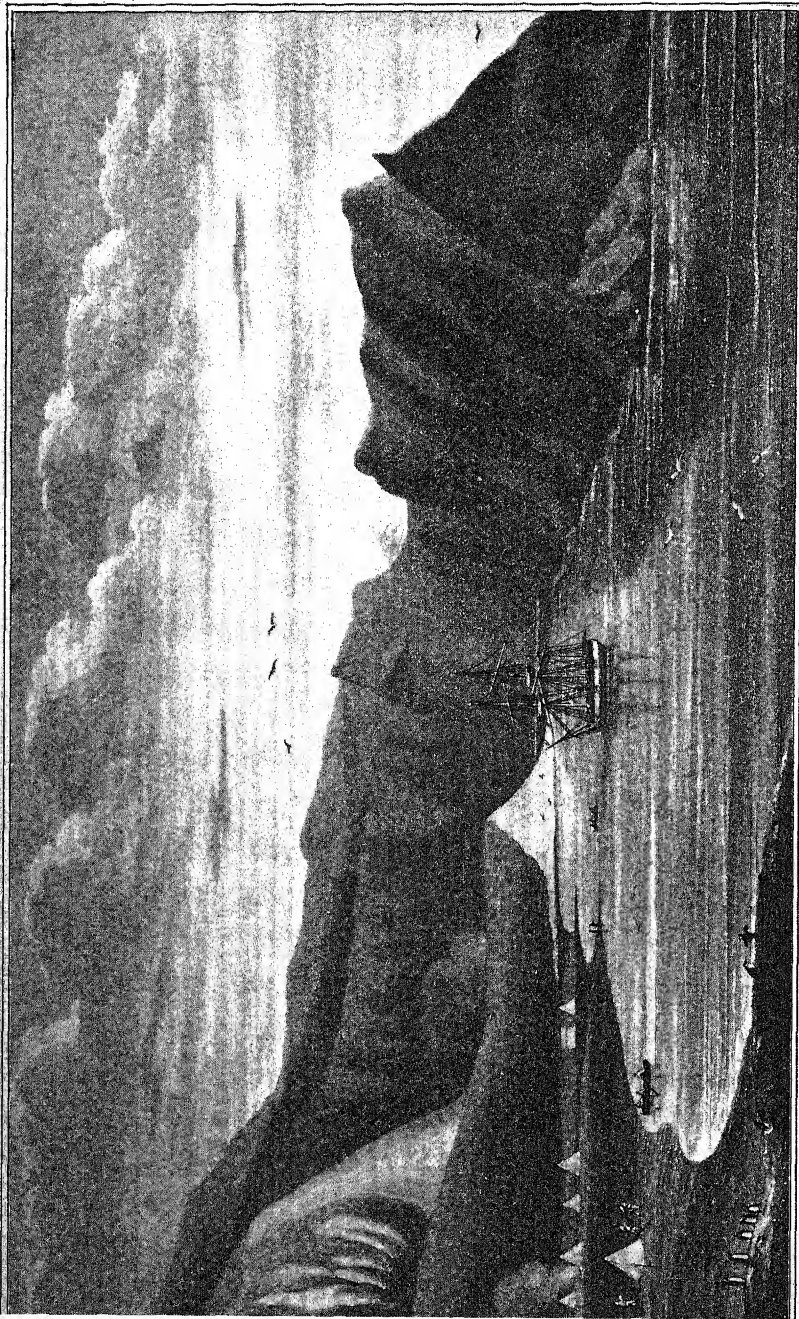
On gaining the inside of the entrance, the opening before us expanded out on both sides into an extensive bay; and we directed the course of the vessel to a small cove on the eastern side of the island, into which she was warped and secured, on the second day after our arrival.

In consequence of the deceptive appearance of this island, enclosing as it does an extensive sheet of water, which may be said to occupy its whole interior, and which cannot be seen from without, it was very appropriately named Deception Island. It is twenty-seven miles in circumference, eight miles across from east to west, and ten from north to south, including, of course, the width of the basin inside it. The whole island consists of one mass of black volcanic ashes and sand, and appears to have been upheaved from the earth beneath it; for the different qualities of ground are conspicuous on the sides of the hills and on the beach, in a burnt

or calcined state, lying over each other in regular strata. The whole island evidently betrays proof of its having been ejected from beneath the surface of the globe; and the various materials, as might be expected from such a convulsion of nature, are scattered about in all parts of the island in the utmost confusion.

The circumference of the island is conspicuously apparent by a high ridge of hills, the slope of which is more abrupt generally towards the sea than towards the basin which they enclose: and considering them as a whole, they bear the appearance of having once been the sides of a volcano, the basin now filled with water having then formed the crater. In this state it might have continued but for the irruption of the sea which forms the entrance by which we came in, and by which it became filled with the sea-water. The highest peak of these hills was estimated at sixteen hundred feet, and the situation of it is on the north side of the island, being due north from the observatory. This peak was named by us Iceberg Hill, from the circumstance of its being capped with ice in a singular manner, so as to give it the resemblance of a huge twelfth-cake. So





17. 44.

Pub. by H. Baileys, London, 1834.

J. Clark, Sculp.

Pendulum Cove, Deception Island, (South Shetland).

ready are we to find assimilations in the objects which present themselves to us, when they appear in the garb of that season to which others belong, although many miles from us.

After the vessel had been secured in the little cove, which seemed adapted completely for the purpose of receiving one, no time was lost by Captain Foster in sending the instruments on shore and commencing the pendulum experiments; and the time which they occupied gave us all ample leisure to examine the various phenomena presented by the island in its different parts. The principal business of the crew was that of putting the vessel in order, both in the arrangement of her hold as well as her rigging: and their occupation on shore was mostly that of killing penguins, seals, &c. Of the different parts of the island, the scenery at the entrance of the basin is by far the most striking, in consequence of the height to which the precipices rise on either side, and the exposure of the different strata of which they are formed. These are of various colours and present a curious and not unpleasing appearance. In various parts of the island cones of red burnt earth, rising to a tolerably high peak, stood conspicu-

ous above the adjacent ridges, very much resembling brick-kilns on a large scale. The general structure of the surface of the hills may be considered snow and black ashes. In some parts the hills appeared to be nothing but immense icebergs, the snow and ice with which they were covered forming a crust of many feet in depth, while the surfaces of them were dusted over with ashes; others, again, displayed regular alternate layers of ashes and ice rising to a considerable height, and hills of ashes filled up the intervening spaces.

A more dreary or more cheerless scene cannot be imagined than that which Deception Island of Shetland presented: the wild and solitary woods of Staten Island, which we had just left, lonely and uninviting as they appeared to us, were desirable to this. There the visiter, although far removed from the busy scenes of life, and destitute of the social comforts of civilized beings, finds vegetation flourishing; and in the animated face of nature there is much to gladden his heart and to employ his mind in its solitary glens; but here all is joyless and comfortless, huge masses of cinders and ashes lie strewed about, which imagination converts into the refuse of Vulcan's forge. No vestige of

vegetation relieves the eye, tired of contemplating ashes and lava, from which it can find no other relief than snow: instead of grand and beautiful rocks towering above each other, and overhanging the water in magnificent precipices of awful height, their summits covered with Nature's richest mantle a beautiful foliage, we had here hills of black dust and ashes topped with snow, and enormous icebergs buried beneath immense loads of volcanic matter: instead of the variety of birds of elegant plumage which adorn other happier regions, hosts of penguins here strut about with stupid mien, harmless and happy in their dreary abode as they are unsuspecting of harm from man. Such a scene reminds one of the lines of Bruce, in which it is well pourtrayed:

“My Mary, what a scene is here!
I've traversed many a mountain strand
Abroad and in my native land;
And it has been my lot to tread
Where safety more than pleasure led.
But a scene so rude and wild as this,
Yet so sublime in barrenness,
Ne'er did my wandering footsteps press
Where 'er I happ'd to roam.”

We had not a little difficulty to ascertain what the composition of the hill really was, to

which we might be walking. The reverberating sound which attended our footsteps, as we trod on some parts, indicated a hollowness, which led us to imagine that some great chasm or vault, left by the volcano, was ready beneath to receive and to enclose us for good and all in its deep recess. The shores of some parts of the basin were formed of extensive beaches, which originated from the loose materials washed down from the hills, and spread level by the waves of the sea. A few watercourses might be seen here and there, fluctuating in quantity, and shifting in position from day to day, as the power of the sun varied in melting the snow and ice from whence they derived their source. Yesterday a rapid and broad rivulet might be seen hurrying down into the sea; to-day it is a question, from its diminution, whether it is the same; and to-morrow not a vestige would remain of it to a superficial observer: but to him whose scrutinizing eye had scanned its former course, the furrow which it has left is only visible here and there. Frequently what the sun has thawed during the day becomes frozen during the night, for even in the midst of summer, here stern winter holds his unrelenting sway, and treasures up his eternal snows.

A strange conflict of elements, and a no less singular contrariety of agents, are displayed in Deception Island; the dark colour of the ashes forming a striking contrast with the whiteness of the snow with which they are indiscriminately combined; the beaches are reeking with hot steam, while the water of the sea, within a few feet distance, is at the freezing point; volumes of smoke and steam are rushing from the peaks of snow-clad hills, while prodigious masses of ice and snow are standing on the verge of boiling springs. Such are the scenes presented at Deception Island. Milton, in his *Paradise Lost*, has given some lines very applicable to it, and which I cannot resist quoting:

“ A dismal prospect here appals the eye,
A dungeon horrible on all sides around,
A wild and dreary waste where Chaos sits,
The womb of Nature, or perhaps her grave;
Hot, cold, moist and dry, four champions fierce,
For mastery strive, and to the battle bring
Their embryo atoms—————.”

During our stay at Deception Island we observed no appearance of any active crater, although, as I have before remarked, the peaks of some of the mountains sent forth smoke; but the numerous hot springs with which the shore of the basin abounds, would indicate that

the subterranean fire is merely abated and not extinguished. In our rambles about the hills, subterranean noises were frequently heard, and seemed much like the violent rushing of water under ground. The hot springs to which I have before alluded, present a remarkable phenomenon in Deception Island. In many places on the shores of the basin, particularly between high and low water-mark of the tide, vast volumes of steam are seen rising from the ground for several hundred yards in extent. As the tide ebbs, the beach begins to send forth steam; and, in walking along the shore, a person is fairly enveloped in hot steam; while on one side he is hemmed in with towering icebergs, and on the other by the sea-water of a temperature not far from the freezing point. The hot water bubbles up through the beach, which in some places is of a stiff and compact nature; and on digging into it a strong sulphureous odour is sent forth, the water at the same time becoming hotter, and, at a trifling depth from the surface, being within a few degrees of the boiling point. We found the temperature of the water issuing from these hot springs to be 185° Fahrenheit; and considerably higher near some

beds of alum rock in some parts of the beach. There is also another very remarkable feature attending these springs in point of locality; they are not only confined to particular places, but also extend in narrow bands along the beach, nor does the heat from them extend to any distance around. The water belonging to them has a slight styptic flavour where it is near the alum rocks, and in other places it does not differ from common hot water, more particularly when it comes up through a bed of ashes.

There can be little doubt that these thermal springs are the effects of some latent fire produced by the chemical agency of sulphureous earth and pyrites. Some of the lofty hills, especially Iceberg Hill over the observatory, was always sending forth steam. On examining the summit of it, a bed of hot sulphureous clay and some aluminous efflorescences were found to compose it, from which the same sort of steam arose as from the beach. The vapour generally forms a dense cloud over the hill, and encircles it like a wreath of mist.

From the loose nature of the component parts of Deception Island, it is subject to great and constant changes. The loose materials of

which these hills are formed, easily descend with the rapid streams produced by the melted snow and ice ; and this melting process displaces icebergs and detaches huge portions of the hills beneath which they lie. At times the streams proceeding from the snow-water are swollen by heavy rains, which expedite in no small degree the displacement of the ashes, depositing them in the gullies, filling up ravines, and forming banks near the sea-shore with what they carry down being again washed back by the surf.

In addition to these effects of running water continually changing the face of the island, the action of the wind performs its part. Immense clouds, formed by minute particles of loose ashes, are swept from place to place by the violence of the wind. Columns of ashes mixed with snow are transported in various directions, for each are as loose as the sand of the desert. From the hills they are swept to the plains and into the basin, and from the plains they are carried again to the hills by the heavy gales, and whirlwinds produced by the latter ; in fact this was one of the greatest annoyances we had while at the island, for black volcanic sand or ashes mixed with scoriaceous lava like the dross

of a forge abounded most on the island. Some pieces of scoria resembled cinders or coke so closely, that we could scarcely persuade ourselves that they would not burn in the same manner and give out heat. A trial was made, and we soon found that they became melted into a vitreous substance: the pumice also ran in the same manner, although there was much less in proportion. Some of the compact lava also fused easily, thereby showing that it had not been subjected to so great a heat as we had been disposed to believe. In the course of these experiments the idea occurred to me that this vitreous matter might answer for the purpose of glazing pottery.

Sailors are very ready to familiarize themselves with objects about them. They see so great a variety of scenery, and such a constant succession of fresh objects, that to them nothing comes amiss; they are quite at home with all they see, and are ever ready to find resemblances in anything to objects with which they may have been familiar. For instance, there is a mountain near the entrance of the harbour of Rio Janeiro, which has received and still bears the appellation of "Lord Hood's Nose,"

from the circumstance of the peculiar outline which it presents when seen from the sea, resembling that feature in his lordship's face to which they were well accustomed. The Paps is a term very commonly applied to two round hills anywhere connected by lower land, and bearing a similar character of feature to the female breast : and many other terms are also applied from similar reasons. The inventive minds of our men were speedily at work, and each remarkable feature in the island had its cognomen ; Crimson Hill, Iceberg Hill, and others were successively named ; and the small cones so plentifully scattered about were termed brick-kilns.

The temperature of the sea-water in the basin was not affected by the subterranean heat of the island, the surface being generally between 32° and 37° of Fahrenheit. One night during our stay, the surface of it was frozen entirely over ; and this occurring in the middle of summer, may convey a tolerable idea of the climate of Deception Island.

Vegetation is a word of very limited signification when applied with reference to Deception Island ; for it would then include only

the growth of a diminutive moss, and a striped coralloid lichen, identically the same as that which is found on the lofty hills of Cape Horn and Tierra del Fuego. The seaweeds are neither interesting nor numerous, nor is any variety of fish to be found in the basin. There were plenty of a small species of shrimps, but they were not fit to be eaten; and a small lizard-tailed starfish was more numerous than I had seen it anywhere. There was also a very handsome species of echinus or sea-egg.

The islands of South Shetland, and Deception Island among the rest, formerly abounded with seals; but such is the havoc made by sealers among them, that they are now scarce and seldom seen. The shores of this basin must have formed a delightful retreat for these persecuted creatures before it was found out by man, retired and secluded as it is; but during our stay we did not see a solitary fur-seal. The sea-leopard however, which is a species of the seal, we did, and obtained several specimens of his skin. This is the animal described by Professor Jamieson, and the head and teeth are figured in Home's "Comparative Anatomy" as a seal of New Georgia. The length of a fullgrown sea-

leopard, or leopardine seal, is nine feet from the snout to the extremity of the flipper ; its extreme breadth across the body is three feet, and its height one foot ; the greatest circumference of the body is five feet, and its average weight is about eight hundred pounds. The skin of this animal is of little value ; but the blubber or subcutaneous fat, which is three or four inches thick, yields a very fine and good oil, and about twenty gallons may be obtained from each seal. The liver of this animal is a palatable food, being free from any disagreeable flavour, and the heart and kidneys likewise are not to be rejected ; but the flesh of the animal is abominably coarse and rancid. These seals come on shore in January, keeping close always to the water-side ; they are remarkably inanimate and dull creatures when on land, and have very limited powers of walking. When attacked, they rear themselves on their hind flippers and open their mouths ; but they are as imbecile and powerless as they are destitute of the means of defence, and their deficiency in locomotion renders them an easy prey to the hunter. Their coats are generally of a dull drab colour, and

formed of short coarse hair, which is occasionally spotted with white.

Of the inhabitants of Deception Island, birds are certainly by far the most numerous kind : and in considering them, the race of penguins, from the multitudes which we found, deserve to be placed first. These poor creatures suffered severely by the visit of the Chanticleer ; but, although some thousands might be numbered among the slaughtered, salted and eaten, by our people, I question whether we made any apparent diminution in their numbers. It is a very curious but well ascertained fact regarding birds that from the rankest carrion vulture to the most delicate barn-door fowl, including even the humming-bird and ostrich, all are eatable, none possess any noxious quality. In our voyage we have devoured with avidity the most rapacious gulls, and the strongest-flavoured of sea-fowl. Land birds, however, of any kind, are preferable to the palate ; but the eggs of all species, both land and sea, are good. Although an edible food, I cannot say much for the flesh of the penguins that we obtained at Deception Island, in this particular. The method of cook-

ing them, by which we found they were most palatable, was that of frying them in slices with a little pork ; but when they are salted, and preserved by this means for any length of time, they certainly form the most disgusting food, worse even than dogs-meat of the most repulsive kind.

The other birds which we found here were two species of terns of an elegant description ; the Port-Egmont hen of Cook, a bold rapacious bird, with a crouching vulture-like appearance, usually prowling about the beach in search of prey : the *larus fuscus*, or black-headed gull, a graceful and elegant creature, which moves with all the dignity and ease imaginable. The stormy petrel, or Mother Cary's chicken of sailors, is also found in great numbers at Deception Island. This little creature is perpetually on the wing, skimming over the troubled surface of the sea as the swallow over the placid lake, hovering over the water which contains its prey, and buoying itself up now and then, keeping aloof from the waves by the pattering of its little web feet and long legs, ever avoiding to alight on the ocean from whence it obtains

food. It wanders over the stormy waves, its only home the boundless air.

The Cape pigeon, which had accompanied us even from the eighteenth degree of south latitude, did not forsake us here. Indeed they are constant and unwearied attendants of ships on the longest voyages, notwithstanding the practice of some unfeeling sailors, who repay this attention by catching them as they would fish, with a hook and line. They eagerly swallow the hook, baited with anything, as it follows the track of the ship, and thus become an easy prey. It is said that they are good eating, and are frequently seen more than two thousand miles from the land. The *procellaria nivea*, or snowy blue-nosed peterel, is also common at Deception Island; and the *procellaria gigantea*, a large grey bird of voracious habits, more commonly known as the Nelly. It stands about sixteen inches high, and is about five feet across from wing to wing; and has a strong musky odour. The *pelicanus graculus*, or blue-eyed shag, and *vaginalis alba*, or sea pigeon, complete the list of the feathered tribe of Deception Island. And I must say that the *vaginalis alba*, found in great numbers in the caves, and under the

edges of overhanging icebergs about the island, formed most excellent materials for pies, and were considered the best dish on our table afforded by these regions. They appeared to be very tame, and to have no great power of flight; in fact, it was a matter of speculation with us to account for the manner in which they found their way here. They congregate in large flocks; and being tame, are easily approached and knocked down with a stick. The extreme length of the bird is about fifteen inches, and their spread of wing ten inches, the plumage being entirely white.

Respecting the climate of South Shetland, the summer may be compared to a dull November in England, and the winter considered as one long starless and desolate night. A perpetual gloom prevails, which the glorious sun seldom or never penetrates so as to be distinctly seen for many hours together; and as for the stars, they and the moon are scarcely ever visible. Fine days are, "like angels' visits, few and far between." Situated in a high southern latitude and surrounded by a wide expanse of sea, the atmosphere of South Shetland is loaded with vapour, and everything is damp and humid.

The sun's rays act feebly at all times ; but in their most powerful form, there is nothing to collect or to acknowledge their genial influence, masses of snow and ice repress and overpower their effect.

The sea in the basin of Deception Island is generally at a low temperature, only two or three degrees above the freezing point in the midst of summer. During the months of January and February, in which we were here, the warmest months of the year, we had frequent heavy falls of snow. A black-bulbed thermometer was exposed to the sun at every opportunity, and the greatest height of the mercury, under the most favourable circumstances of an unclouded meridian sun, was 77° . The general range and average of the intensity of the sun's heat was only 66° . It was found that putrefaction does not readily take place in the climate of Deception Island ; for on opening a grave, which had attracted the attention of one of our officers, the body was found entire, and free from any unpleasant odour, although we had reason for believing that it had lain there some years. It was supposed to have been deposited by the crew of some sealing vessel. We observ-

ed also that the carcasses of seals on the beach, and pieces of the flesh of penguins, were converted into a soft greasy mass, without further decomposition taking place. The climate may be considered as very healthy. We experienced no disease in the crew of the Chanticleer during our stay, excepting some slight cases of chilblains, and a few catarrhal affections, which indeed were less than could be fairly anticipated. It is but justice however to state, that the general healthiness of the Chanticleer's crew must be greatly attributed to the unremitting care and exertions of Lieutenant Austin; and to his assiduity and attention, not only to the discipline but the comforts of the men, I have no hesitation in attributing the absence of illness. Not a rheumatic pain was felt; and every one soon became reconciled to this uniformly cold and cheerless scene.

During the time we remained at South Shetland, which was from January till March, we had been particularly anxious to observe the *aurora australis*, or southern lights: but no such appearance was seen, nor had any of the sealers or others whom we questioned on the subject ever observed them. The astronomers,

Messrs. Wales and Bayley, who accompanied Captain Cook, record, in their meteorological observations, having seen the aurora of the south, on the 25th of February 1773, in latitude 57° south and longitude 110° east. On the 17th of February they saw, in latitude 57° south and longitude 83° east, various streams of light without any motion whatever. In latitude 58° south and longitude 91° east, the aurora was again seen, the colours more variegated and lively, and with motion. The aurora was also frequently seen in 1773 in 150° east; but in January 1774, although Captain Cook went as far as 71° south, longitude 136° to 134° west, no aurora was observed; because, says Professor Hansteen, the developement of light in the vicinity of the South-American magnetic pole seems far less strong than near the Australian in the South-Indian ocean.

CHAPTER VIII.

Difficulty of getting away from Deception Island.—Absence of icebergs.—Passage to Cape Horn.—Anchor in St. Martin's Cove.—Fuegians.—Their feeble nature.—Fuegian wigwam.—A bad scholar.—Character of the Fuegian Indians.—Curious mode of catching fish.—Canoes.—Deserted by the Fuegians.—Hermit Island.

ON Monday the 2nd March, we began to evince symptoms of departure from Deception Island, to the great satisfaction of all on board. The little Chanticleer was getting ready, and our proceedings, from the quiet and monotonous manner in which they had been going on, now assumed a totally different character. All the requisite measures of preparing for sea were going forward ; and notwithstanding the squally weather, attended with rain, which annoyed us much, and promised us still more trouble, boats were sent to bring on board a gun from the head of the bay, which had been landed. This gun had been taken on shore some time pre-

vious, for the purpose of making some experiments on sound. It had settled down and become buried in the ashes in a very remarkable manner, and was extremely difficult to extricate. During the night it blew a gale from the north-west; but the day was employed in carrying on our arrangements for sea. In the afternoon of the 3rd we attempted to unmoor; but in consequence of the wind veering to the eastward, accompanied with squalls and snow, we were obliged to secure the vessel again, and let the anchors alone.

The 4th of March was a day of toil; and never was labour bestowed with so little advantage towards a desired purpose, although it was indispensable for our safety. At four in the morning we commenced unmooring the Chanticleer by heaving up the small bower anchor; but before this was up, a breeze set in from the south-west, and the violent gusts which accompanied it obliged us to keep the hawsers fast to the western shore, and to lay the stream anchor to the north-east shore of the cove, for the purpose of steadying the vessel. The best bower cable was unbent from the anchor which had been laid on shore, and was hove

into the vessel. At seven, in consequence of a breeze blowing out of the cove, the vessel was canted by the hawsers, and, slipping them, we set the foresail and fore-and-aft sails to make our way out of the cove, at the same time sending the boats ahead to tow. We had no sooner gained the western point at the entrance of the cove than a violent gust of wind caught us, and drove us over to the eastern shore. This could not be prevented, as the water was so deep that we had no chance with our anchors, and the entrance besides was very narrow. Sail was immediately reduced; and while she lay thus quietly resting her sides against the shore, which by the way it must be observed would be no enviable position in a tideway, and at the best of times one not to be desired, a boat was sent to bring on board the ends of the hawsers which we had let go as we made sail out of the cove. By means of these we got the Chanticleer off, and once more into her former berth without injury.

In this manner our pains had been thrown away, and the whole morning spent in vain; but this was nothing to what followed on each successive day till we left the cove. Violent

gales of wind, accompanied with heavy squalls of snow and rain from nearly every quarter in succession, came sweeping down upon us from the adjacent mountains; and in addition to the loose nature of the ground, which rendered our heaviest anchors at times unavailable, besides the immense depth of water in the cove, our situation sometimes was by no means free from danger, as we drifted about at the mercy of every wind. After attempting incessantly to get out of the basin every day during the week, the morning of Sunday dawned more propitiously on us, and a favourable wind wafted us away from our dreary prison in which we had been confined several weeks. But that we might still more appreciate our escape, as we passed through the entrance, a light baffling air once more placed us in a critical situation, from which we were only extricated by the promptitude and decision of Lieutenant Austin. Our gallant fellows in the boats cleared us of the danger; and having gained the outside of Deception Island, we felt all the force of the lines commencing with—

“Once more upon the waters, yet once more.”

On gaining the outside of the island, it was

rather remarkable that not an iceberg was to be seen anywhere, although on our arrival a great number had surrounded it. To us, who had been so accustomed to these dangerous masses, this was a most gratifying discovery. Elated at our prospects, with a fine breeze we passed by the Sail Rock, a small isolated rock which was so named by us from its resemblance to a cutter's sail with the peak dropped. It is of a pyramidal form, distant about eight miles from the land, one hundred and eighty feet in height, and is composed of a mass of tufa or burnt earth, precisely the same as that of Deception Island.

Before a fine fresh breeze from the north-eastward we continued running the remainder of the day, sometimes at the rate of seven miles per hour; but at night our speed was arrested. After a violent gust or two, the wind moderated and shifted round to the westward, with rain and sleet, which compelled us to keep to the northward. Nor had we enjoyed our good fortune long before we met with icebergs, and passed close to one. The presence of this formidable danger kept us uneasy all the night, and obliged us to keep a vigilant look-out to avoid others.

On the 9th March we saw Smith's Island to the southward, and were becalmed the greater part of the day; at noon the island was due south of us, distant thirty miles. The sea was perfectly clear of icebergs.

Our passage to Cape Horn was boisterous and tedious, in consequence of a succession of gales from the south-west and north-west, the wind never settling long in either quarter. We had every reason however to be satisfied with the behaviour of our little vessel, she was indeed the admiration of us all; but we had to put up with the inconvenience of the hatches being battened down, and to suffer close confinement not under the most favourable circumstances. As we approached Cape Horn, experiments were made to ascertain the direction and force of the current. On the 19th, in latitude 56° , $30'$ south and longitude 64° west, a boat was lowered for this purpose, and it was found to set north twenty-eight degrees west, ten miles per hour.

On Tuesday the 24th March, about one in the afternoon, we discovered the land near Cape Horn, bearing north 33° west, distant thirty miles, when sail was immediately made to close

with it. The evening arrived, bringing with it unsettled weather and a northerly wind ; at ten we sounded in fifty fathoms, the bottom black pebbles.

At daylight on the 25th March, we discovered the land again ; and the wind favouring us from the eastward, all sail was made, and the black rocky coast of Cape Horn was quickly approached. As we neared the land a strange vessel was seen, but at too great a distance for communication. The distance to Cape Horn from New South Shetland is about four hundred miles, and the passage had occupied us eighteen days.

Cape Horn, the southern termination of South America, has been described by a modern naval author as presenting a "bold and majestic appearance, worthy of the limit to such a continent. It is a high, precipitous, black rock, conspicuously raised above all the neighbouring land, utterly destitute of vegetation, and extending far into the sea in black and solitary grandeur." It must not be forgotten, however, that Captain Hall, from whose work this is quoted, had just left the sunny vales of Rio Janeiro and Buenos Ayres ; and no doubt the dark and forbidding

appearance of Horn Island, the southern extremity of which forms this celebrated cape, was anything but captivating in his estimation. We, however, were from a different part of the world, and did not entertain such an opinion of its height as this celebrated author did.

It was now three months since we left Cape Horn; and accustomed as we had been to the snow-clad precipices of Deception Island, the lofty naked mountains of the former were objects of novelty and welcome to us at first, because they were free from snow. As we approached the bay of St. Francis, which is studded with rocky islands, we were even greeted with the welcome sight of vegetation. We continued our course into the bay, and entered the second opening on its western side, named St. Martin's Cove. Here all the beauties of the wildest Alpine scenery burst upon our view. As we passed into the cove, a wigwam was discovered, the smoke from which was curling among the trees. Shortly after a canoe, with several of the Indians, was observed paddling out towards the vessel. They were apparently inclined to come on board, to which no encouragement was given, as they were likely to prove

troublesome and be in the way on the decks while we were engaged in shortening sail and bringing the vessel to anchor. We found our way into the cove without accident, and anchored in the afternoon in eighteen fathoms and a-half water, again free from the incessant buffeting of the sea, in tranquillity and repose.

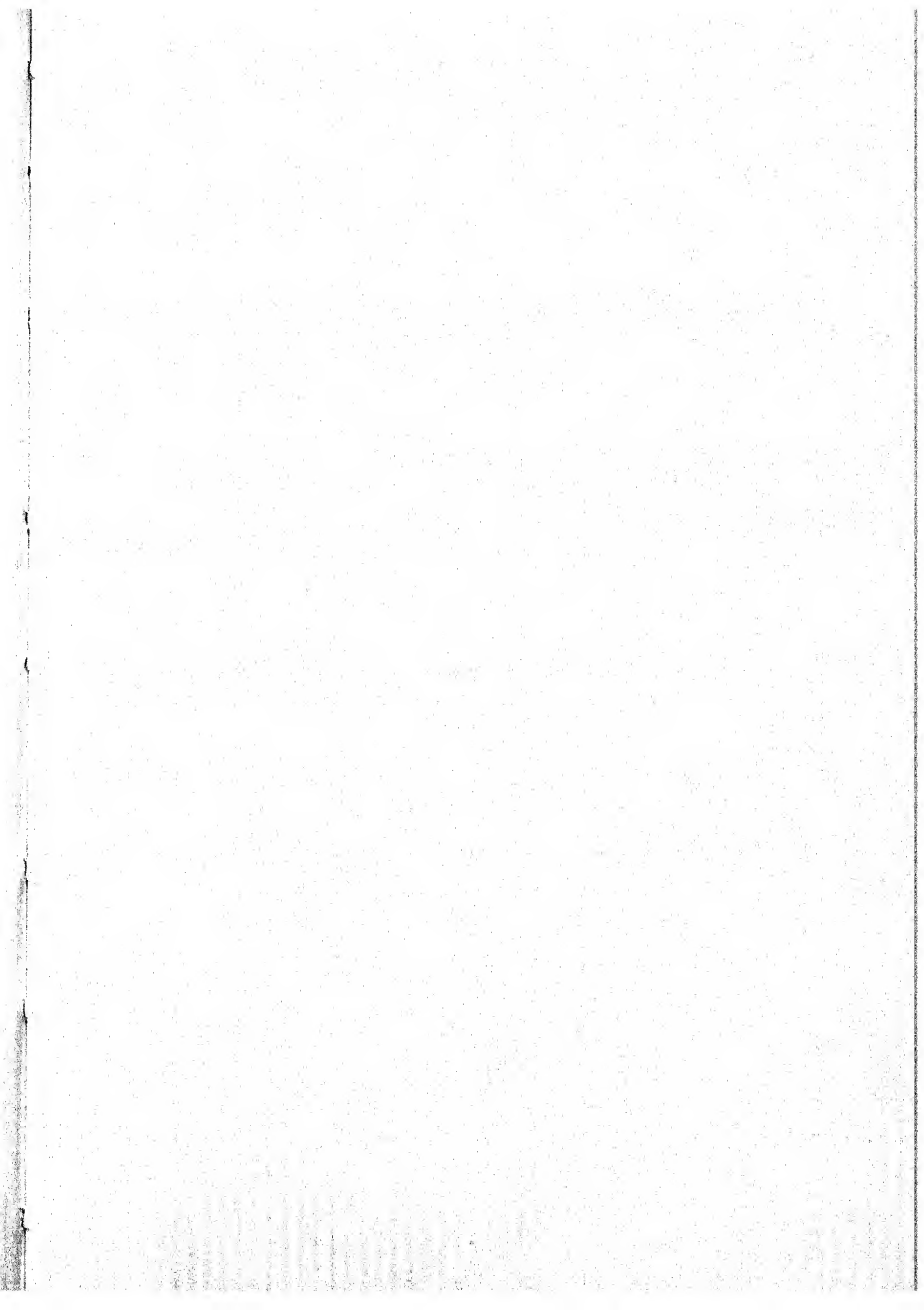
Captain Foster seemed to be uncertain whether an adjacent cove, called Maxwell's Harbour, would not afford us more security than St. Martin's Cove which we had entered; and accordingly next day he proceeded to examine it, and returned in the afternoon satisfied that it was not so well adapted for observation as this. On the 27th March, measures were taken for securing the little Chanticleer in the cove; and parties were employed in shifting her position from the anchorage we had first taken up, to another nearer to the interior shore. A kedge anchor was laid out farther up the cove, and the vessel was warped to it, and eventually she was moored with seventy-two fathoms of chain-cable each way across the cove. A party was also employed in the afternoon, under the directions of Captain Foster, in erecting an useless pier on the beach for the purpose of landing

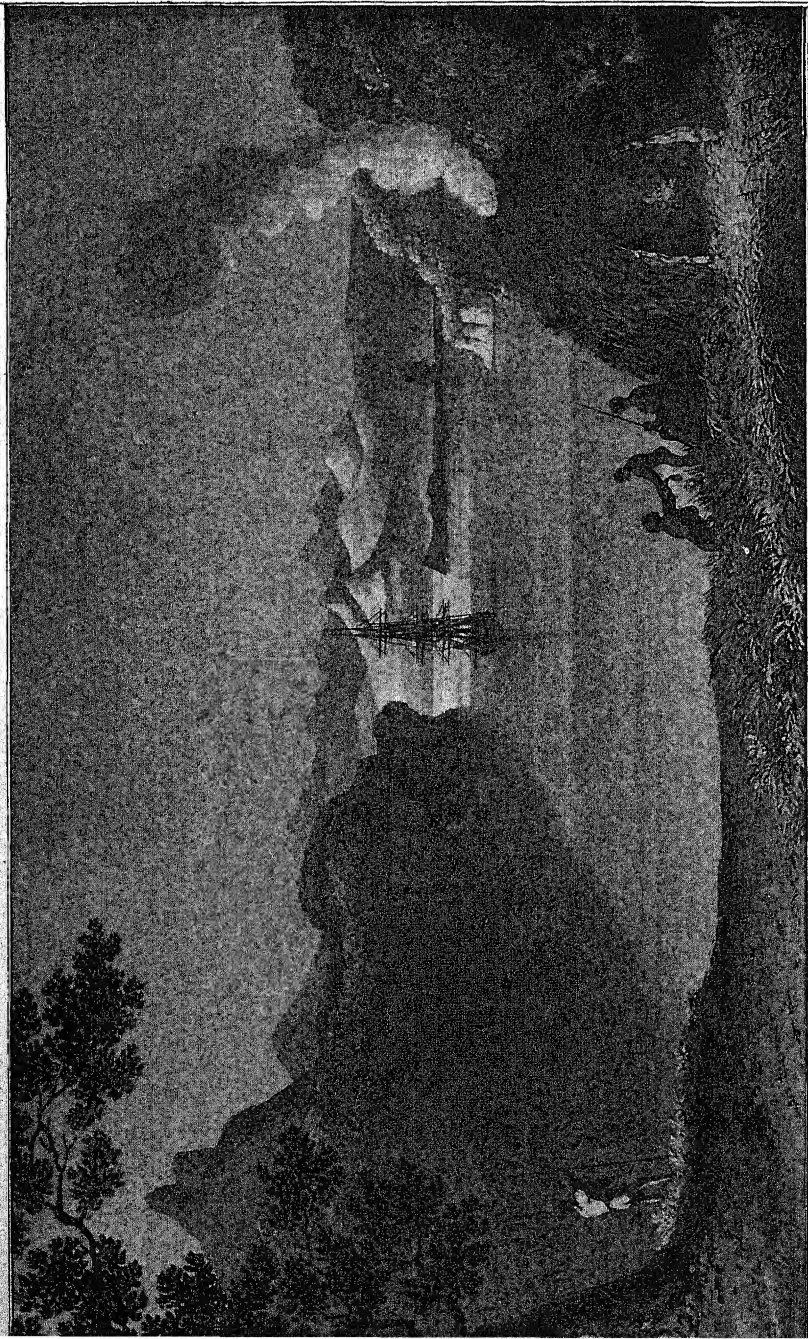
the instruments in safety. This process employed several days, in which interval Captain Foster proceeded to Cape Spencer, the southern point of Hermit Island, for the purpose of making observations for its position. Night came on, and his return was looked for in vain. The weather became stormy, with rain at intervals, and alarm was felt for his safety. Every necessary precaution was taken by Lieutenant Austin, to show our position. Blue lights were repeatedly burnt, and muskets were fired. A boat was also sent to the mouth of the cove, with blue lights and rockets; and it was not before eleven at night that he returned on board.

Several days were employed in making the necessary arrangements on shore for carrying on the pendulum experiments; much delay was experienced in consequence of the bad weather; and it was not until nearly a fortnight after our arrival that they were fairly commenced.

During a few days after our arrival, we were much gratified with the company of some Fuegian people, as the natives of Tierra del Fuego are called. A friendly intercourse was opened between us and a party of them, whose wig-

wams we found at the bottom of the cove. The usual presents were made them of a few trinkets and stained glass beads, with which they were much pleased, and proceeded to ornament their persons. As it was our intention to remain in St. Martin's Cove some time, we made a point of conciliating these people, and keeping on as friendly terms with them as possible. We frequently paid visits to their habitations, carrying with us some articles of trifling value: gilt buttons seemed to attract their attention very much, and they expressed great delight when presented with them. Among other things we gave them some hatchets, and showed them their use. They received them, but did not seem to take much interest in learning their application to any useful purpose. A very little labour seemed to exhaust them; and instead of doing it themselves, they were continually applying to our men to cut wood for their fire. They would even ask them to launch their canoes, and appeared to possess neither the spirit of industry nor exertion; and in consequence of not employing themselves in pursuits which required exercise, they seemed to be weak and incapable of undergoing labour.





W. R. N. del.

Pub. by R. Bentley, London 1834.

J. Clark. Sculp.

St. Martin's Cove near Cape Horn.

The Fuegian wigwam is probably one of the most wretched of this kind of structure. The North American Indian has his birch bark, and contrives to thatch the sides of it so as to render it impervious to the rain, which however, it must not be forgotten, finds its way into it through the aperture left in the top for the escape of the smoke. The African negro has his hut of clay, which, although it may be suffocating and ill calculated for the tropical climate, nevertheless protects him from the inclemency of the weather. Even the Esquimaux has his snow hut, and is equally secure from the effects of the intemperate regions in which it is his lot to be placed; but a few green boughs of trees is all that the Fuegian can find to construct the habitation which is to protect him from the cold, wet, and boisterous climate of Tierra del Fuego. It is of a circular form, generally not larger than will afford room for a family of five or six persons, who squat themselves round a fire in the middle in listless apathy. This miserable habitation boasts not the meanest or most common utensil, and the bare ground forms its floor. Here they sit, with occasionally a seal-skin covering thrown over their shoulders, and some-

times an apron of some animal's skin tied round their middle; but neither of these appear by any means to be indispensable articles of dress, and many are in a state of nudity; all suffering alike from the effects of smoke on their eyes. The dog, the faithful companion of man in every clime, lives on terms of the most intimate friendship with them, sharing alike their bed and board. The Fuegian dog is an animal of a good size, and of a better appearance than might be expected from the nature of his food. The animal bears considerable resemblance to a fox in his general appearance; he is very ferocious, and not unlike an Esquimaux dog.

In one of my visits to their wigwams, with the view of instructing them how to be useful to themselves and to each other, a red pocket-handkerchief attracted their attention. This I presented to the youngest female in the company, which consisted of five persons. The girl, to my great surprize, deliberately tore it into ribands, and began to ornament her hair with it; she also tied some pieces round her wrist, having previously offered me some dried fish in return for my present. We had given them fish-hooks, lines, knives, needles and thread,

scissors, &c. and I endeavoured to instruct them how to use the latter articles, so essential to the economy and manufacture of dress among ourselves. The Fuegians are decidedly a tractable and docile people, fully capable of receiving instruction: and I took no small pains in teaching one of the women the art of using a needle and thread to the best of my humble abilities in that line. I thought I should have succeeded by the attention which was paid to me by my pupil; for, although my performance was none of the best, it was still sufficient to "teach the young idea." But, alas, it was all to no purpose. I might have spared my trouble; for the woman on whom my pains had been bestowed, deliberately made a hole with the needle and then drew the thread out of it, and proceeded quietly to insert it into the hole the needle had made. This was the more provoking, because, in spite of all my instruction, she still persisted in doing it.

These people betrayed great apathy and indifference at our appearance. In the course of our attempts to obtain a knowledge of their character and disposition, we found them uniformly mild and good-natured, with most frequently a

smile on their countenance. There was nothing ferocious either in their manners or appearance, but at the same time we found no symptoms of fear or cowardice among them. They would scarcely listen to the sound of a flute, but they would join in a song, or rather endeavour to follow the air with their voices, and gave us the opportunity of hearing that they were soft and melodious. On our showing a glass to one of the women, after looking at herself in it, she rubbed it over her face and then laid it aside.

The Fuegian men are an indolent race of beings; they cultivate no ground, and like the women take little or no exercise. The riches of a Fuegian family consist of a canoe, a dog, and their fishing tackle. They are of a chubby appearance, generally well-conditioned, of moderate stature, but rather inclining to be short than otherwise. They have no beards, and only a few short hairs on their upper lip; they have dark glistening eyes, with long fine and soft black hair; their teeth are white and regular, and the calves of their legs are very small.

The Fuegian women are rather less in stature than the men; they are also stouter, and have

slender wrists with rather small hands and handsome tapering fingers, which they use with a gracefulness not to be found elsewhere among their class in the scale of the creation. Their habits are simple and inoffensive; their general demeanour modest and becoming. They are remarkably quick in speech, and imitated our words frequently with considerable success, repeating what was said with great rapidity. They have a filthy habit of daubing soot and grease mixed together on their faces: they disfigure their legs with streaks of a white pigment, the principal ingredient of which is grease; they also anoint their hair with a mixture of grease and red ochre; all of which tends not a little to render the vicinity of their persons by no means desirable. They wear necklaces made of shells, the principal of which is a little red snail-shell; and their persons are also decorated with various bone ornaments strung together. The only emblem of cleanliness which we could discover was the jaw of a porpoise, for it appears that the minuteness and regularity of the teeth enable them to use it as a comb, a contrivance which cannot be considered but as highly creditable to these people. The

children are in general potbellied, but good looking.

The women, as is the case with most other Indians, are the obsequious servants of the men, their idle lords and masters. They paddle the canoe and fish while the men indolently look on ; in fact, the women perform all the laborious duties which belong properly to their male companions. The first canoe that came to us after our arrival was paddled by two women, while the men in her were idly looking at us.

The Fuegians subsist principally by fishing, and have recourse to a remarkable expedient to supply the place of a hook. They fasten a small limpet in its shell to the end of a line, which the fish readily swallows as bait. The greatest care is then taken by them not to displace the limpet from his stomach in drawing the fish gradually to the surface of the water ; and when there, the woman watches a favourable moment, and with great dexterity, while she retains the fish by the line with one hand, seizes hold of it with the other and quickly lifts it into the canoe. It is evident that there is no little care required in this operation, and some degree of management is necessary to keep the limpet-

shell, the substitute for the hook, in the possession of the fish; for, by any sudden jerk which the fish is likely to give, it would be very easily displaced, and he would find himself at liberty. The women, however, are particularly expert at this method of taking fish; and we were more than once amused by it. There are a vast number of limpets and muscles, on which they principally subsist, although they manage to catch a porpoise now and then, or a seal, which affords them a temporary luxury. They live much on berries, and are sometimes so fortunate as to catch a few birds. In order to do this, the Indian secretes himself, and decoys them by imitating their notes, until they are sufficiently near to be within the range of his arrow.

The canoes of the Fuegians are constructed principally of the bark of the beech-tree wrapped and secured round a series of half-hoops of the wood of the same tree, which serve as ribs, and are placed at short distances apart. They are plaistered with clay, which renders them heavy, although they are not more than nine feet in length. The upper sides of the canoe are kept together by means of three thwarts or cross pieces, and the persons in them are generally

seated on the bottom. They never make use of a sail, but invariably propel them with paddles; a small fire is generally seen in the middle of them; and they use a little cup made of a peculiar flat sea-weed much resembling leather, for the purpose of baling the water out of it. The canoe constitutes the principal riches of a Fuegian family; it affords them the means of transporting themselves from one place to another, and also enables them to obtain the principal part of their food.

The only weapons we observed among these people were slings, bows and arrows. The latter are neatly made, and pointed with obsidian. Their bows and arrows are employed for the destruction of birds; warfare appears not to trouble these people; happily for them it has not reached their shores. They use a dried lichen as tinder, and procure fire by the friction of two pieces of pyrites, a fire-stone with which their country abounds. One night we fired some rockets for the purpose of obtaining difference of time, and the poor Indians were so alarmed by them, that they fled into the woods and stayed there the whole night. In fact, they were so alarmed, by them that they forsook us

early the ensuing morning, and never returned again, imagining that we were in possession of an evil spirit which we could always let loose among them at pleasure.

Hermite Island is very mountainous ; and in many parts, although the island is not very extensive, some lofty precipices of two thousand feet are to be found. The island is about twelve miles long and seven broad, the greatest length extending in an east and west direction ; and it is the principal one in the entrance to the noble bay of St. Francis. It is scarcely possible to find a dozen yards of level ground throughout the island, so completely is it broken into a series of rocky hills. The ground between them is mostly wet and swampy, covered with peat moss and decayed vegetable matter ; the hills are clothed to the very summit with a dense forest of trees and shrubs, and abound with streams of fresh water, which may be seen tumbling down their sides in all directions, rendering it unpleasant to walk any distance from the shore. In fact, from the natural springs of the island and the frequency of rain, a resident here would be compelled to lead a hermit's life. The highest hill, or more properly speaking the

loftiest mountain of the island, is two thousand one hundred and fifty-six feet above the level of the sea.

The geological structure of the island is greenstone and hornblende rock, mixed with granite and quartz. There is no stratification; nor did I observe any indication of metals. The soil is of the nature of clay; it is wet and boggy, producing extensive beds of peat. On the hills are several lakes of water, the rocky basins which form them being generally filled to their brim.

The vegetation of Hermite Island is of limited extent, the plants being much the same as those of Staten Island. The beech-tree is generally smaller, and appeared to be much stunted in its growth by the violence and constancy of the winds to which it is exposed. It is very crooked and knotty, and fit only for fuel. The antarctic or evergreen beech is mingled with the deciduous species of this tree. It was very scarce at Staten Island; but here it grows in abundance, and by the change of colour in its fading leaves, which are plentifully sprinkled in groups among the dense green foliage by which it is surrounded, it produces a pleasing contrast,

and adds variety and an autumnal appearance to the whole. The smaller shrubs, lichens, and plants were precisely the same as those we found at Staten Island.

Parties were generally employed every day, when the weather permitted, in taking fish with lines, but not with any great success: we were more fortunate in catching them in the sea-weed. These however were small, and it would require the occupation of one person for a whole day to catch sufficient for a meal for a few persons. But in consequence of the time that the service on which we were employed would require before we could return to any port for supplies of provisions, it had been considered necessary by Captain Foster to reduce the usual allowance of provisions, and we were now enduring that privation. A few fish therefore, even sufficient for a meal now and then, were most acceptable to us.

Birds are scarce on Hermite Island, and the supply of meat, such as it was, which we used to obtain at Deception from penguins, was not to be had here; they were not to be found on this island. We saw no animals, and of shells we only found two or three species, so that the

natural productions of Hermite Island are even less than those of Staten Island ; but the boisterous climate in which it lies, and its peculiar situation at the very extremity of the southern point of South America, exposed to the rudest violence of the wind, render it an abode not likely to be sought by any part of the creation that delights in quietness and fine weather. Here everything is dripping with rain, and bending under the violence of the wind, the effects of which a few short intervals of calm are not sufficient to compensate.

CHAPTER IX.

Climate of Cape Horn.—Similar parallels and dissimilar temperatures.—Erroneous notions of temperature.—Humming birds in snow showers.—Equality of the Summer and Winter.

THE climate of Cape Horn, the same as that of Hermite Island, is one entirely peculiar to itself, and not generally understood. Persons naturally look to corresponding parallels of latitude in the northern hemisphere for similar effects in climate; but nothing can be more erroneous; and a consideration of the different portions of land and sea generally in parts of the two hemispheres under the same parallels, will at once account for the great difference which actually is found to exist. We remained nine weeks in St. Martin's Cove, and found the weather boisterous and extremely wet, the wind being almost constantly from the westward, veering from north to south by the west. The following statement is the result of the observa-

tions made during our stay, on board the Chanticleer and at the observatory on shore :

Barometer.

Mean height . . .	29.35	Temper. of the sea, 39° to 53°
Highest . . .	30.00	Ditto mean, 45°
Lowest . . .	28.30	Rain in 41 days, 12ft. 6in.
Mean daily range .	00.30	Evaporation, 2ft. 6in.
Daily ranges sometimes	00.70	Wind veering from NNW. to

Thermometer.

SSW.

Fahrenheit, mean .	44°
Range from . .	31 to 61°

The following were made in the month of May :

Thermometer.

Fahrenheit, mean,	40°	The sea, mean,	43
Max. .	48	Max. .	49
Min. .	30	Min. .	36
Winds, S. W.	12 days	N. E.	2
South,	4	North	2
N. W. .	3	Calm	1
		Variable,	5

The Report of the Commissioners of the Academy of Sciences at Paris in 1825, on the voyage of M. Duperry, says : “ Since the celebrated voyages of Cook, no one doubts that the southern hemisphere is decidedly colder than the northern. At what distance from the equator therefore does this difference commence, and by what law does it increase as the latitude increases ? ” Dr. Foster also, in his celebrated and

valuable work published in 1772, observes on the subject of the temperature of the southern regions as follows : “ If we compare the meteorological observations of the Falkland Islands and corresponding degrees of latitude in the northern hemisphere : if we consider Tierra del Fuego and Staten Island in 54° south, the whole land covered with eternal snows in the summer months, every unprejudiced reader will find it necessary to allow the temperature of the southern hemisphere to be remarkably colder than the northern : and no one will, I believe, for the future venture to question this curious fact in the natural history of the globe.” We have here a very extraordinary instance of a well-informed scientific man allowing his opinion to be swayed by that very prejudice against which he would warn others. Had he for a moment reflected, that at Quebec, in latitude 47° north, it is a common occurrence every winter to see the thermometer at 20° or even 30° below zero, where could he have found corresponding temperature in the southern hemisphere, even to the southward of the 47th parallel ? But we will consider this question a little farther ; for it is one of no little interest, and, if we mistake not,

it will be no difficult matter to show that a corresponding climate must not be looked for in corresponding parallels of the northern and southern hemispheres.

Cape Horn and the adjacent parts may be considered as under the parallel of 55° south; let us see what we find under the parallel of 55° north. We have there the north of England, the Baltic, Denmark, Koningsberg, Moscow, the winters of which are well known for their rigour—if we except England,—for an obvious reason, *i. e.* being surrounded by sea. The Baltic is frozen and its ports are closed by ice. In Kamschatka and Tobolsk the winters are famed for their severity. In North America the parallel of 55° passes over Labrador and Hudson's Bay; the winters there are severe indeed: nay even at Quebec, to which we have just alluded, several degrees to the southward, the thermometer in the winter is lower than ever it was heard of to the south of the equator. The winters of Newfoundland, the northernmost part of which is far south of 55° , are severe and protracted; its harbours are completely frozen up for three or four months of the year; the snow lies long on the ground!

the winter seldom breaks up before May, and the whole coast is beset with icebergs for the first part of the summer.

Let us now consider the winters of Cape Horn. Had this part of the world been known to the ancients, we should most assuredly have found it named in classic lore as the abode of Æolus, from whence he dispersed the winds over all quarters of the globe. Such a designation would by no means have been misapplied; for most assuredly wind, accompanied with rain, sleet, snow, or hail, is the prevailing characteristic of this climate. It is a climate of excessive humidity; for, besides that arising from the vast expanse of ocean by which it is surrounded, rain, more or less, falls every night; not a single twenty-four hours passed during our stay without it. The quantity of rain that fell during one calendar month, from the 21st of April to the 21st of May, was eight inches, which is more than a third of the quantity that annually falls in England. The rain is so violent and incessant that one would suppose that the waters of the firmament were again falling in the shape of a second deluge. The gullies between the hills become so many courses for

torrents of water; and the continuance of the rain at times is so protracted that it becomes tedious, and a temporary gleam of sunshine is cheering to behold; the heart gladdens at the welcome sight, and feels the full force of the lines—

“’Twas sweet once more to view on high
The rainbow, based on ocean, span the sky.”

Full well do I remember, after being confined several days, witnessing this gratifying symbol amid the gloomy distant regions of Hermite Island; for it was the only time we saw it there during the space of eight months.

South-west gales are exceedingly violent at Cape Horn, and are accompanied by the most terrific squalls that I have ever witnessed; these squalls may be considered hurricanes for the short time they last. They rush down the hills in the ravines with the most awful violence, threatening destruction to all before them, carrying the sea up in spray over the sides of the cove some hundred feet. Whenever they caught the Chanticleer on her broadside, their effect was to heel her over to a considerable angle, as if she were under sail, and this, too, in a well-sheltered cove. Sheltered

from the sea it certainly was ; but the severity of the wind, as might be expected, was greater near the high land, where its progress is arrested in one part only to increase its violence in another. These south-west gales were frequently attended at their onset with thunder and lightning, at least such was the case in St. Martin's Cove in April and May ; but the same manifestation of electrical agency did not take place at sea.

The north-west gales are not generally considered so heavy as those from the south-west quarter ; they are always accompanied by rain ; but nevertheless blow with great force, and frequently veer round to the south-west without abating their fury. The wind will commence in the north-west, and is rapidly succeeded by a gale from some other point of the western quarter, most generally the south-west.

Easterly winds are reported to be most prevalent in the winter months of June and July, but they seldom blow with much strength, nor are they of long duration. It may be generally expected that they will be succeeded by a westerly gale. The weather accompanying them is mild and fine, but there are a very few days in a

month of fine tranquil weather. A gentle breeze from the north-west is sometimes attended with fine weather.

We have seen that the sea-ports of those countries under the same parallel in the northern hemisphere, as Cape Horn is in the southern, are frozen up, and that the winters of the various places there are famed for their severity. Such, however, is not the case with Cape Horn ; none of the little bays or ports which abound so plentifully in its neighbourhood are ever frozen up, nor are those of Staten Island. The sealing vessels that frequent this island have scarcely ever found the brooks of fresh water, so numerous there, in a frozen state for many hours together ; and the snow rarely lies for two or three days at a time on the ground. Not only does the thermometer show the fact, that the southern regions are absolutely milder than the northern ; but Nature herself asserts it. The Fuegian Indians are perfectly naked ; they care for no dress and seldom use it. Where such is the case, the cold cannot be very severe. How is it in the corresponding northern parallels ? The Canadian, the North American Indian, the Esquimaux, the Russian, the native of Kam-

schatka, sufficiently attest by their warm clothing the peculiar severity of their respective climes. Again, vegetation, that unerring index of climate in all parts of the world, proclaims the winter of these southern regions to be mild and temperate. Here in the latter end of May (answering to our November) the face of Nature abounded with luxuriance, many of the vegetable tribe were in flower, and everything wore its cheering summer aspect.

On the subject of the climate of Tierra del Fuego, Captain P. P. King, R. N., who commanded his Majesty's ship *Adventure*, and was employed surveying at the time we were here, has made the following remarks in a paper laid by him before the Royal Geographical Society.* After stating that the temperature of Port Famine, two degrees to the northward of Hermite Island, is frequently as low as 29° Fahrenheit in the summer, he says, "One circumstance, however, deserves to be mentioned, which may in some measure account for the innocuous effect of so low a temperature. I have occasionally during summer been up the greater part of the night at my ob-

* Geographical Society's Transactions, vol. i. pp. 168, 169.

servatory, with the internal as well as the external thermometers as low as the freezing point, without being particularly warmly clad, and yet not feeling the least cold; and in the winter, the thermometer, on similar occasions, has been at 24° and 26° without my suffering the slightest inconvenience. This I attributed at the time to the peculiar stillness of the air, although within a short distance in the offing, and overhead, the wind was high.

“Whilst upon this subject,” he adds, “there are two facts which may be mentioned, as illustrative of the mildness of the climate, notwithstanding the lowness of the temperature. One is, the comparative warmth of the sea near its surface, between which and the air I have, in the month of June, the middle of the winter season, observed a difference of 30° , upon which occasion the sea was covered with a cloud of steam. The other is, that parrots and humming birds, generally the inhabitants of warm regions, are very numerous in the southern and western part of the strait—the former feeding on the seeds of the winter’s bark, and the latter being seen by us chirping and sipping the sweets of the fuchsia and other flowers, after two or three

days of constant rain, snow, and sleet, during which the thermometer has been at the freezing point. We saw them in the month of May upon the wing, during a snow shower, and they are found in all parts of the south-west and west coasts as far as Valparaiso. I have since been informed, that this species is also an inhabitant of Peru, so that it has a range of more than 41° of latitude, the southern limit being 53° south."

That no such bird inhabits an extent so far as $53\frac{1}{2}^{\circ}$ north is quite certain. There are two observations to be made on the foregoing; namely, first, that at Port Famine, which is two degrees to the northward, and *nearer the equator* than Hermite Island, the winter appears to be *colder*, as the thermometer falls lower; and second, that the birds alluded to by Captain King would find a more temperate region still to the south, but are no doubt glad to find a retreat in the sheltered creeks and inlets of the northern part of Tierra del Fuego, where they can enjoy rest and quietness, which they could not find in the more boisterous regions of Cape Horn. The fact appears to be that a low mean temperature prevails throughout the year in

the southern seas : at Cape Horn the sun produces but little effect in the summer, and there is no intensity of heat for a few months as in the northern regions, owing, in my opinion, to the disproportionate expanse of ocean to that of land. The climate of the Falkland Islands corroborates this assertion : there it is mild ; the thermometer is seldom seen so low as 32° , generally ranging about 40° . Snow never lies there for twenty-four hours, excepting on high land ; the harbours are never frozen up, and the crews of vessels go barefooted with impunity ; and these islands are in about the same parallel as Port Famine, with a milder climate.

I cannot help thinking that the circumstance which occurred to Cook in his first voyage, has gone far towards confirming an erroneous opinion of the cold of these regions. It is quite inexplicable to me how Dr. Solander and a party who were ascending a mountain, (while the *Discovery* lay in the bay of Good Success,) could possibly feel the effects of cold as they did. We are told that he was seized with a torpor, the effects of the cold ; and that two black servants were actually frozen to death asleep. And yet here plants flourished !—they

On the 9th March we saw Smith's Island to the southward, and were becalmed the greater part of the day; at noon the island was due south of us, distant thirty miles. The sea was perfectly clear of icebergs.

Our passage to Cape Horn was boisterous and tedious, in consequence of a succession of gales from the south-west and north-west, the wind never settling long in either quarter. We had every reason however to be satisfied with the behaviour of our little vessel, she was indeed the admiration of us all; but we had to put up with the inconvenience of the hatches being battened down, and to suffer close confinement not under the most favourable circumstances. As we approached Cape Horn, experiments were made to ascertain the direction and force of the current. On the 19th, in latitude $56^{\circ} 30'$ south and longitude 64° west, a boat was lowered for this purpose, and it was found to set north twenty-eight degrees west, ten miles per hour.

On Tuesday the 24th March, about one in the afternoon, we discovered the land near Cape Horn, bearing north 33° west, distant thirty miles, when sail was immediately made to close

with it. The evening arrived, bringing with it unsettled weather and a northerly wind ; at ten we sounded in fifty fathoms, the bottom black pebbles.

At daylight on the 25th March, we discovered the land again ; and the wind favouring us from the eastward, all sail was made, and the black rocky coast of Cape Horn was quickly approached. As we neared the land a strange vessel was seen, but at too great a distance for communication. The distance to Cape Horn from New South Shetland is about four hundred miles, and the passage had occupied us eighteen days.

Cape Horn, the southern termination of South America, has been described by a modern naval author as presenting a "bold and majestic appearance, worthy of the limit to such a continent. It is a high, precipitous, black rock, conspicuously raised above all the neighbouring land, utterly destitute of vegetation, and extending far into the sea in black and solitary grandeur." It must not be forgotten, however, that Captain Hall, from whose work this is quoted, had just left the sunny vales of Rio Janeiro and Buenos Ayres ; and no doubt the dark and forbidding

appearance of Horn Island, the southern extremity of which forms this celebrated cape, was anything but captivating in his estimation. We, however, were from a different part of the world, and did not entertain such an opinion of its height as this celebrated author did.

It was now three months since we left Cape Horn; and accustomed as we had been to the snow-clad precipices of Deception Island, the lofty naked mountains of the former were objects of novelty and welcome to us at first, because they were free from snow. As we approached the bay of St. Francis, which is studded with rocky islands, we were even greeted with the welcome sight of vegetation. We continued our course into the bay, and entered the second opening on its western side, named St. Martin's Cove. Here all the beauties of the wildest Alpine scenery burst upon our view. As we passed into the cove, a wigwam was discovered, the smoke from which was curling among the trees. Shortly after a canoe, with several of the Indians, was observed paddling out towards the vessel. They were apparently inclined to come on board, to which no encouragement was given, as they were likely to prove

troublesome and be in the way on the decks while we were engaged in shortening sail and bringing the vessel to anchor. We found our way into the cove without accident, and anchored in the afternoon in eighteen fathoms and a-half water, again free from the incessant buffeting of the sea, in tranquillity and repose.

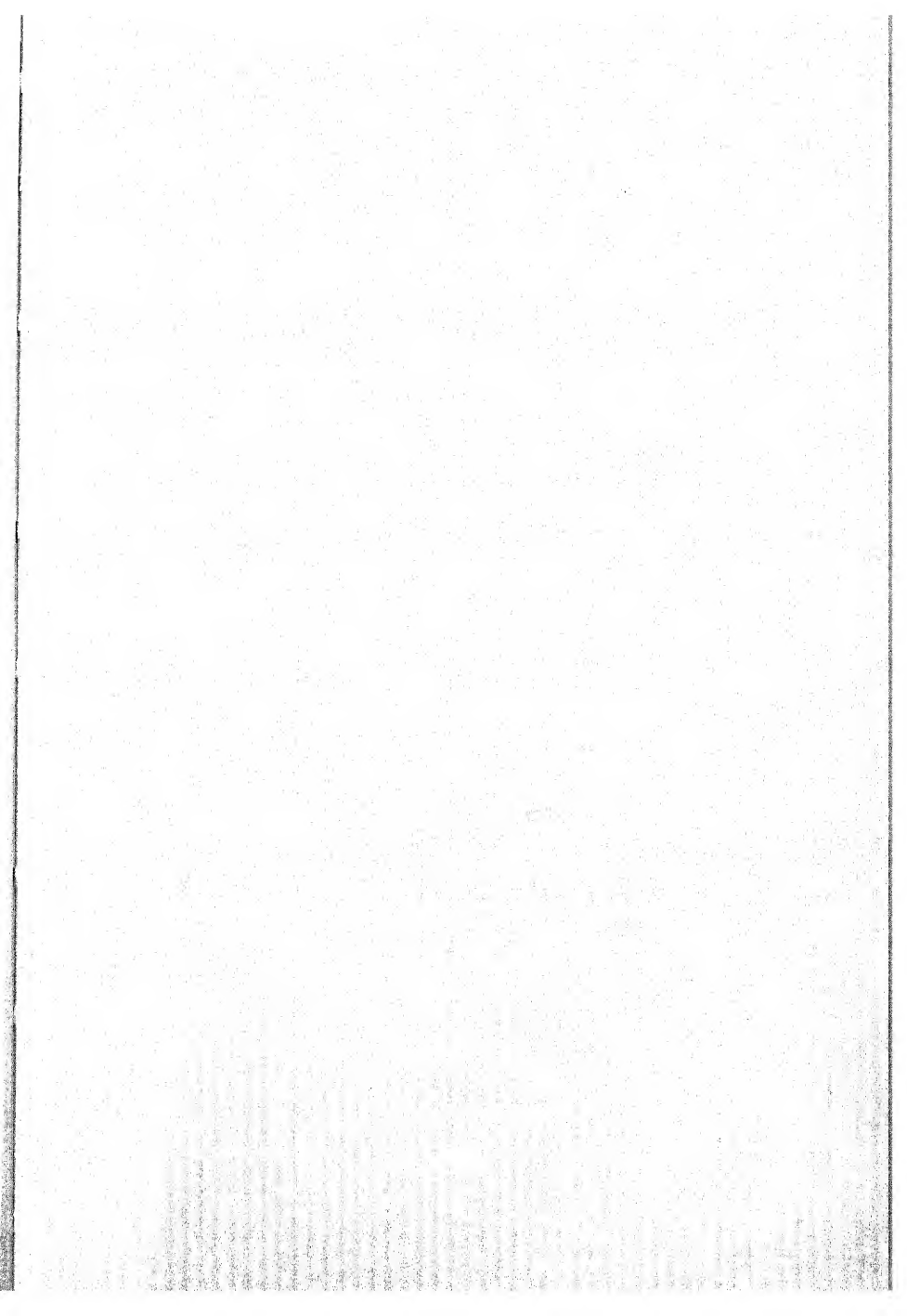
Captain Foster seemed to be uncertain whether an adjacent cove, called Maxwell's Harbour, would not afford us more security than St. Martin's Cove which we had entered; and accordingly next day he proceeded to examine it, and returned in the afternoon satisfied that it was not so well adapted for observation as this. On the 27th March, measures were taken for securing the little Chanticleer in the cove; and parties were employed in shifting her position from the anchorage we had first taken up, to another nearer to the interior shore. A kedge anchor was laid out farther up the cove, and the vessel was warped to it, and eventually she was moored with seventy-two fathoms of chain-cable each way across the cove. A party was also employed in the afternoon, under the directions of Captain Foster, in erecting an useless pier on the beach for the purpose of landing

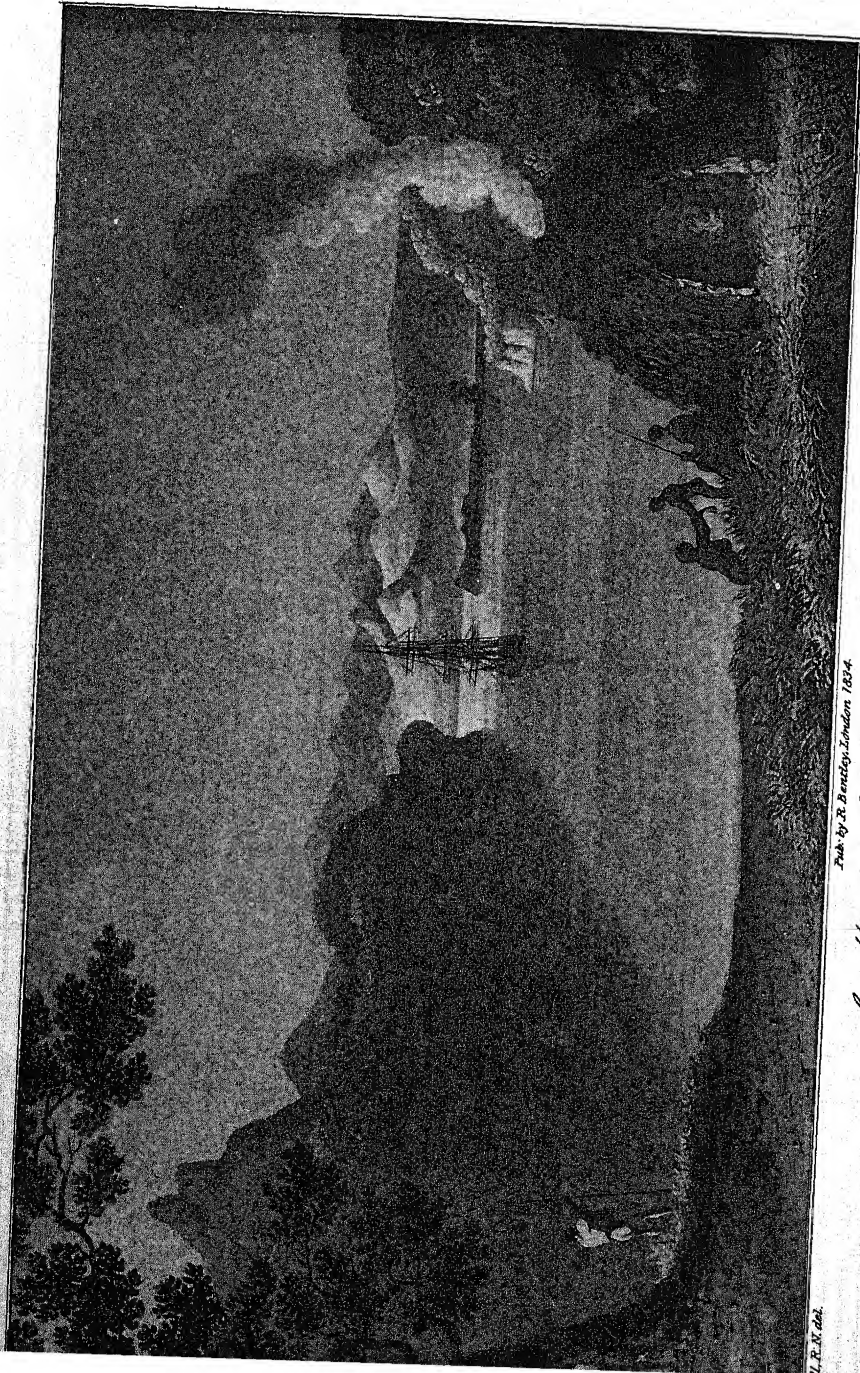
the instruments in safety. This process employed several days, in which interval Captain Foster proceeded to Cape Spencer, the southern point of Hermit Island, for the purpose of making observations for its position. Night came on, and his return was looked for in vain. The weather became stormy, with rain at intervals, and alarm was felt for his safety. Every necessary precaution was taken by Lieutenant Austin, to show our position. Blue lights were repeatedly burnt, and muskets were fired. A boat was also sent to the mouth of the cove, with blue lights and rockets; and it was not before eleven at night that he returned on board.

Several days were employed in making the necessary arrangements on shore for carrying on the pendulum experiments; much delay was experienced in consequence of the bad weather; and it was not until nearly a fortnight after our arrival that they were fairly commenced.

During a few days after our arrival, we were much gratified with the company of some Fuegian people, as the natives of Tierra del Fuego are called. A friendly intercourse was opened between us and a party of them, whose wig-

wams we found at the bottom of the cove. The usual presents were made them of a few trinkets and stained glass beads, with which they were much pleased, and proceeded to ornament their persons. As it was our intention to remain in St. Martin's Cove some time, we made a point of conciliating these people, and keeping on as friendly terms with them as possible. We frequently paid visits to their habitations, carrying with us some articles of trifling value: gilt buttons seemed to attract their attention very much, and they expressed great delight when presented with them. Among other things we gave them some hatchets, and showed them their use. They received them, but did not seem to take much interest in learning their application to any useful purpose. A very little labour seemed to exhaust them; and instead of doing it themselves, they were continually applying to our men to cut wood for their fire. They would even ask them to launch their canoes, and appeared to possess neither the spirit of industry nor exertion; and in consequence of not employing themselves in pursuits which required exercise, they seemed to be weak and incapable of undergoing labour.





U. P. N. 1834.

Pub. by R. Bentley, London 1834.

St. Martin's Cove near Cape Horn.

J. Clark. 1834.

The Fuegian wigwam is probably one of the most wretched of this kind of structure. The North American Indian has his birch bark, and contrives to thatch the sides of it so as to render it impervious to the rain, which however, it must not be forgotten, finds its way into it through the aperture left in the top for the escape of the smoke. The African negro has his hut of clay, which, although it may be suffocating and ill calculated for the tropical climate, nevertheless protects him from the inclemency of the weather. Even the Esquimaux has his snow hut, and is equally secure from the effects of the intemperate regions in which it is his lot to be placed ; but a few green boughs of trees is all that the Fuegian can find to construct the habitation which is to protect him from the cold, wet, and boisterous climate of Tierra del Fuego. It is of a circular form, generally not larger than will afford room for a family of five or six persons, who squat themselves round a fire in the middle in listless apathy. This miserable habitation boasts not the meanest or most common utensil, and the bare ground forms its floor. Here they sit, with occasionally a seal-skin covering thrown over their shoulders, and some-

times an apron of some animal's skin tied round their middle ; but neither of these appear by any means to be indispensable articles of dress, and many are in a state of nudity ; all suffering alike from the effects of smoke on their eyes. The dog, the faithful companion of man in every clime, lives on terms of the most intimate friendship with them, sharing alike their bed and board. The Fuegian dog is an animal of a good size, and of a better appearance than might be expected from the nature of his food. The animal bears considerable resemblance to a fox in his general appearance ; he is very ferocious, and not unlike an Esquimaux dog.

In one of my visits to their wigwams, with the view of instructing them how to be useful to themselves and to each other, a red pocket-handkerchief attracted their attention. This I presented to the youngest female in the company, which consisted of five persons. The girl, to my great surprize, deliberately tore it into ribands, and began to ornament her hair with it ; she also tied some pieces round her wrist, having previously offered me some dried fish in return for my present. We had given them fish-hooks, lines, knives, needles and thread,

scissors, &c. and I endeavoured to instruct them how to use the latter articles, so essential to the economy and manufacture of dress among ourselves. The Fuegians are decidedly a tractable and docile people, fully capable of receiving instruction: and I took no small pains in teaching one of the women the art of using a needle and thread to the best of my humble abilities in that line. I thought I should have succeeded by the attention which was paid to me by my pupil; for, although my performance was none of the best, it was still sufficient to "teach the young idea." But, alas, it was all to no purpose. I might have spared my trouble; for the woman on whom my pains had been bestowed, deliberately made a hole with the needle and then drew the thread out of it, and proceeded quietly to insert it into the hole the needle had made. This was the more provoking, because, in spite of all my instruction, she still persisted in doing it.

These people betrayed great apathy and indifference at our appearance. In the course of our attempts to obtain a knowledge of their character and disposition, we found them uniformly mild and good-natured, with most frequently a

smile on their countenance. There was nothing ferocious either in their manners or appearance, but at the same time we found no symptoms of fear or cowardice among them. They would scarcely listen to the sound of a flute, but they would join in a song, or rather endeavour to follow the air with their voices, and gave us the opportunity of hearing that they were soft and melodious. On our showing a glass to one of the women, after looking at herself in it, she rubbed it over her face and then laid it aside.

The Fuegian men are an indolent race of beings; they cultivate no ground, and like the women take little or no exercise. The riches of a Fuegian family consist of a canoe, a dog, and their fishing tackle. They are of a chubby appearance, generally well-conditioned, of moderate stature, but rather inclining to be short than otherwise. They have no beards, and only a few short hairs on their upper lip; they have dark glistening eyes, with long fine and soft black hair; their teeth are white and regular, and the calves of their legs are very small.

The Fuegian women are rather less in stature than the men; they are also stouter, and have

slender wrists with rather small hands and handsome tapering fingers, which they use with a gracefulness not to be found elsewhere among their class in the scale of the creation. Their habits are simple and inoffensive; their general demeanour modest and becoming. They are remarkably quick in speech, and imitated our words frequently with considerable success, repeating what was said with great rapidity. They have a filthy habit of daubing soot and grease mixed together on their faces: they disfigure their legs with streaks of a white pigment, the principal ingredient of which is grease; they also anoint their hair with a mixture of grease and red ochre; all of which tends not a little to render the vicinity of their persons by no means desirable. They wear necklaces made of shells, the principal of which is a little red snail-shell; and their persons are also decorated with various bone ornaments strung together. The only emblem of cleanliness which we could discover was the jaw of a porpoise, for it appears that the minuteness and regularity of the teeth enable them to use it as a comb, a contrivance which cannot be considered but as highly creditable to these people. The

children are in general potbellied, but good looking.

The women, as is the case with most other Indians, are the obsequious servants of the men, their idle lords and masters. They paddle the canoe and fish while the men indolently look on ; in fact, the women perform all the laborious duties which belong properly to their male companions. The first canoe that came to us after our arrival was paddled by two women, while the men in her were idly looking at us.

The Fuegians subsist principally by fishing, and have recourse to a remarkable expedient to supply the place of a hook. They fasten a small limpet in its shell to the end of a line, which the fish readily swallows as bait. The greatest care is then taken by them not to displace the limpet from his stomach in drawing the fish gradually to the surface of the water ; and when there, the woman watches a favourable moment, and with great dexterity, while she retains the fish by the line with one hand, seizes hold of it with the other and quickly lifts it into the canoe. It is evident that there is no little care required in this operation, and some degree of management is necessary to keep the limpet-

shell, the substitute for the hook, in the possession of the fish; for, by any sudden jerk which the fish is likely to give, it would be very easily displaced, and he would find himself at liberty. The women, however, are particularly expert at this method of taking fish; and we were more than once amused by it. There are a vast number of limpets and muscles, on which they principally subsist, although they manage to catch a porpoise now and then, or a seal, which affords them a temporary luxury. They live much on berries, and are sometimes so fortunate as to catch a few birds. In order to do this, the Indian secretes himself, and decoys them by imitating their notes, until they are sufficiently near to be within the range of his arrow.

The canoes of the Fuegians are constructed principally of the bark of the beech-tree wrapped and secured round a series of half-hoops of the wood of the same tree, which serve as ribs, and are placed at short distances apart. They are plastered with clay, which renders them heavy, although they are not more than nine feet in length. The upper sides of the canoe are kept together by means of three thwarts or cross pieces, and the persons in them are generally

seated on the bottom. They never make use of a sail, but invariably propel them with paddles; a small fire is generally seen in the middle of them; and they use a little cup made of a peculiar flat sea-weed much resembling leather, for the purpose of baling the water out of it. The canoe constitutes the principal riches of a Fuegian family; it affords them the means of transporting themselves from one place to another, and also enables them to obtain the principal part of their food.

The only weapons we observed among these people were slings, bows and arrows. The latter are neatly made, and pointed with obsidian. Their bows and arrows are employed for the destruction of birds; warfare appears not to trouble these people; happily for them it has not reached their shores. They use a dried lichen as tinder, and procure fire by the friction of two pieces of pyrites, a fire-stone with which their country abounds. One night we fired some rockets for the purpose of obtaining difference of time, and the poor Indians were so alarmed by them, that they fled into the woods and stayed there the whole night. In fact, they were so alarmed, by them that they forsook us

early the ensuing morning, and never returned again, imagining that we were in possession of an evil spirit which we could always let loose among them at pleasure.

Hermite Island is very mountainous ; and in many parts, although the island is not very extensive, some lofty precipices of two thousand feet are to be found. The island is about twelve miles long and seven broad, the greatest length extending in an east and west direction ; and it is the principal one in the entrance to the noble bay of St. Francis. It is scarcely possible to find a dozen yards of level ground throughout the island, so completely is it broken into a series of rocky hills. The ground between them is mostly wet and swampy, covered with peat moss and decayed vegetable matter ; the hills are clothed to the very summit with a dense forest of trees and shrubs, and abound with streams of fresh water, which may be seen tumbling down their sides in all directions, rendering it unpleasant to walk any distance from the shore. In fact, from the natural springs of the island and the frequency of rain, a resident here would be compelled to lead a hermit's life. The highest hill, or more properly speaking the

loftiest mountain of the island, is two thousand one hundred and fifty-six feet above the level of the sea.

The geological structure of the island is greenstone and hornblende rock, mixed with granite and quartz. There is no stratification ; nor did I observe any indication of metals. The soil is of the nature of clay ; it is wet and boggy, producing extensive beds of peat. On the hills are several lakes of water, the rocky basins which form them being generally filled to their brim.

The vegetation of Hermite Island is of limited extent, the plants being much the same as those of Staten Island. The beech-tree is generally smaller, and appeared to be much stunted in its growth by the violence and constancy of the winds to which it is exposed. It is very crooked and knotty, and fit only for fuel. The antarctic or evergreen beech is mingled with the deciduous species of this tree. It was very scarce at Staten Island ; but here it grows in abundance, and by the change of colour in its fading leaves, which are plentifully sprinkled in groups among the dense green foliage by which it is surrounded, it produces a pleasing contrast,

and adds variety and an autumnal appearance to the whole. The smaller shrubs, lichens, and plants were precisely the same as those we found at Staten Island.

Parties were generally employed every day, when the weather permitted, in taking fish with lines, but not with any great success: we were more fortunate in catching them in the sea-weed. These however were small, and it would require the occupation of one person for a whole day to catch sufficient for a meal for a few persons. But in consequence of the time that the service on which we were employed would require before we could return to any port for supplies of provisions, it had been considered necessary by Captain Foster to reduce the usual allowance of provisions, and we were now enduring that privation. A few fish therefore, even sufficient for a meal now and then, were most acceptable to us.

Birds are scarce on Hermite Island, and the supply of meat, such as it was, which we used to obtain at Deception from penguins, was not to be had here; they were not to be found on this island. We saw no animals, and of shells we only found two or three species, so that the

natural productions of Hermite Island are even less than those of Staten Island; but the boisterous climate in which it lies, and its peculiar situation at the very extremity of the southern point of South America, exposed to the rudest violence of the wind, render it an abode not likely to be sought by any part of the creation that delights in quietness and fine weather. Here everything is dripping with rain, and bending under the violence of the wind, the effects of which a few short intervals of calm are not sufficient to compensate.

CHAPTER IX.

Climate of Cape Horn.—Similar parallels and dissimilar temperatures.—Erroneous notions of temperature.—Humming birds in snow showers.—Equality of the Summer and Winter.

THE climate of Cape Horn, the same as that of Hermite Island, is one entirely peculiar to itself, and not generally understood. Persons naturally look to corresponding parallels of latitude in the northern hemisphere for similar effects in climate; but nothing can be more erroneous; and a consideration of the different portions of land and sea generally in parts of the two hemispheres under the same parallels, will at once account for the great difference which actually is found to exist. We remained nine weeks in St. Martin's Cove, and found the weather boisterous and extremely wet, the wind being almost constantly from the westward, veering from north to south by the west. The following statement is the result of the observa-

tions made during our stay, on board the Chanticleer and at the observatory on shore :

Barometer.

Mean height . . .	29·35	Temper. of the sea, 39° to 53°
Highest . . .	30·00	Ditto mean, 45°
Lowest . . .	28·30	Rain in 41 days, 12ft. 6in.
Mean daily range .	00·30	Evaporation, 2ft. 6in.
Daily range sometimes	00·70	Wind veering from NNW. to SSW.

Thermometer.

Fahrenheit, mean .	44°
Range from . .	31 to 61°

The following were made in the month of May :

Thermometer.

Fahrenheit, mean,	40°	The sea, mean, .	43
Max. .	48	Max. .	49
Min. .	30	Min. .	36
Winds, S. W.	12 days	N. E.	2
South,	4	North	2
N. W. .	3	Calm	1
		Variable,	5

The Report of the Commissioners of the Academy of Sciences at Paris in 1825, on the voyage of M. Duperry, says : “ Since the celebrated voyages of Cook, no one doubts that the southern hemisphere is decidedly colder than the northern. At what distance from the equator therefore does this difference commence, and by what law does it increase as the latitude increases ?” Dr. Foster also, in his celebrated and

valuable work published in 1772, observes on the subject of the temperature of the southern regions as follows: "If we compare the meteorological observations of the Falkland Islands and corresponding degrees of latitude in the northern hemisphere: if we consider Tierra del Fuego and Staten Island in 54° south, the whole land covered with eternal snows in the summer months, every unprejudiced reader will find it necessary to allow the temperature of the southern hemisphere to be remarkably colder than the northern: and no one will, I believe, for the future venture to question this curious fact in the natural history of the globe." We have here a very extraordinary instance of a well-informed scientific man allowing his opinion to be swayed by that very prejudice against which he would warn others. Had he for a moment reflected, that at Quebec, in latitude 47° north, it is a common occurrence every winter to see the thermometer at 20° or even 30° below zero, where could he have found corresponding temperature in the southern hemisphere, even to the southward of the 47th parallel? But we will consider this question a little farther; for it is one of no little interest, and, if we mistake not,

it will be no difficult matter to show that a corresponding climate must not be looked for in corresponding parallels of the northern and southern hemispheres.

Cape Horn and the adjacent parts may be considered as under the parallel of 55° south; let us see what we find under the parallel of 55° north. We have there the north of England, the Baltic, Denmark, Koningsberg, Moscow, the winters of which are well known for their rigour—if we except England,—for an obvious reason, *i. e.* being surrounded by sea. The Baltic is frozen and its ports are closed by ice. In Kamschatka and Tobolsk the winters are famed for their severity. In North America the parallel of 55° passes over Labrador and Hudson's Bay; the winters there are severe indeed: nay even at Quebec, to which we have just alluded, several degrees to the southward, the thermometer in the winter is lower than ever it was heard of to the south of the equator. The winters of Newfoundland, the northernmost part of which is far south of 55° , are severe and protracted; its harbours are completely frozen up for three or four months of the year; the snow lies long on the ground!

the winter seldom breaks up before May, and the whole coast is beset with icebergs for the first part of the summer.

Let us now consider the winters of Cape Horn. Had this part of the world been known to the ancients, we should most assuredly have found it named in classic lore as the abode of Æolus, from whence he dispersed the winds over all quarters of the globe. Such a designation would by no means have been misapplied ; for most assuredly wind, accompanied with rain, sleet, snow, or hail, is the prevailing characteristic of this climate. It is a climate of excessive humidity ; for, besides that arising from the vast expanse of ocean by which it is surrounded, rain, more or less, falls every night ; not a single twenty-four hours passed during our stay without it. The quantity of rain that fell during one calendar month, from the 21st of April to the 21st of May, was eight inches, which is more than a third of the quantity that annually falls in England. The rain is so violent and incessant that one would suppose that the waters of the firmament were again falling in the shape of a second deluge. The gullies between the hills become so many courses for

torrents of water; and the continuance of the rain at times is so protracted that it becomes tedious, and a temporary gleam of sunshine is cheering to behold; the heart gladdens at the welcome sight, and feels the full force of the lines—

“’Twas sweet once more to view on high
The rainbow, based on ocean, span the sky.”

Full well do I remember, after being confined several days, witnessing this gratifying symbol amid the gloomy distant regions of Hermite Island; for it was the only time we saw it there during the space of eight months.

South-west gales are exceedingly violent at Cape Horn, and are accompanied by the most terrific squalls that I have ever witnessed; these squalls may be considered hurricanes for the short time they last. They rush down the hills in the ravines with the most awful violence, threatening destruction to all before them, carrying the sea up in spray over the sides of the cove some hundred feet. Whenever they caught the Chanticleer on her broadside, their effect was to heel her over to a considerable angle, as if she were under sail, and this, too, in a well-sheltered cove. Sheltered

from the sea it certainly was ; but the severity of the wind, as might be expected, was greater near the high land, where its progress is arrested in one part only to increase its violence in another. These south-west gales were frequently attended at their onset with thunder and lightning, at least such was the case in St. Martin's Cove in April and May ; but the same manifestation of electrical agency did not take place at sea.

The north-west gales are not generally considered so heavy as those from the south-west quarter ; they are always accompanied by rain ; but nevertheless blow with great force, and frequently veer round to the south-west without abating their fury. The wind will commence in the north-west, and is rapidly succeeded by a gale from some other point of the western quarter, most generally the south-west.

Easterly winds are reported to be most prevalent in the winter months of June and July, but they seldom blow with much strength, nor are they of long duration. It may be generally expected that they will be succeeded by a westerly gale. The weather accompanying them is mild and fine, but there are a very few days in a

month of fine tranquil weather. A gentle breeze from the north-west is sometimes attended with fine weather.

We have seen that the sea-ports of those countries under the same parallel in the northern hemisphere, as Cape Horn is in the southern, are frozen up, and that the winters of the various places there are famed for their severity. Such, however, is not the case with Cape Horn; none of the little bays or ports which abound so plentifully in its neighbourhood are ever frozen up, nor are those of Staten Island. The sealing vessels that frequent this island have scarcely ever found the brooks of fresh water, so numerous there, in a frozen state for many hours together; and the snow rarely lies for two or three days at a time on the ground. Not only does the thermometer show the fact, that the southern regions are absolutely milder than the northern; but Nature herself asserts it. The Fuegian Indians are perfectly naked; they care for no dress and seldom use it. Where such is the case, the cold cannot be very severe. How is it in the corresponding northern parallels? The Canadian, the North American Indian, the Esquimaux, the Russian, the native of Kam-

schatka, sufficiently attest by their warm clothing the peculiar severity of their respective climes. Again, vegetation, that unerring index of climate in all parts of the world, proclaims the winter of these southern regions to be mild and temperate. Here in the latter end of May (answering to our November) the face of Nature abounded with luxuriance, many of the vegetable tribe were in flower, and everything wore its cheering summer aspect.

On the subject of the climate of Tierra del Fuego, Captain P. P. King, R. N., who commanded his Majesty's ship *Adventure*, and was employed surveying at the time we were here, has made the following remarks in a paper laid by him before the Royal Geographical Society.* After stating that the temperature of Port Famine, two degrees to the northward of Hermite Island, is frequently as low as 29° Fahrenheit in the summer, he says, "One circumstance, however, deserves to be mentioned, which may in some measure account for the innocuous effect of so low a temperature. I have occasionally during summer been up the greater part of the night at my ob-

* Geographical Society's Transactions, vol. i. pp. 168, 169.

servatory, with the internal as well as the external thermometers as low as the freezing point, without being particularly warmly clad, and yet not feeling the least cold; and in the winter, the thermometer, on similar occasions, has been at 24° and 26° without my suffering the slightest inconvenience. This I attributed at the time to the peculiar stillness of the air, although within a short distance in the offing, and overhead, the wind was high.

“Whilst upon this subject,” he adds, “there are two facts which may be mentioned, as illustrative of the mildness of the climate, notwithstanding the lowness of the temperature. One is, the comparative warmth of the sea near its surface, between which and the air I have, in the month of June, the middle of the winter season, observed a difference of 30° , upon which occasion the sea was covered with a cloud of steam. The other is, that parrots and humming birds, generally the inhabitants of warm regions, are very numerous in the southern and western part of the strait—the former feeding on the seeds of the winter’s bark, and the latter being seen by us chirping and sipping the sweets of the fuchsia and other flowers, after two or three

days of constant rain, snow, and sleet, during which the thermometer has been at the freezing point. We saw them in the month of May upon the wing, during a snow shower, and they are found in all parts of the south-west and west coasts as far as Valparaíso. I have since been informed, that this species is also an inhabitant of Peru, so that it has a range of more than 41° of latitude, the southern limit being 53° south."

That no such bird inhabits an extent so far as $53\frac{1}{2}^{\circ}$ north is quite certain. There are two observations to be made on the foregoing; namely, first, that at Port Famine, which is two degrees to the northward, and *nearer the equator* than Hermite Island, the winter appears to be *colder*, as the thermometer falls lower; and second, that the birds alluded to by Captain King would find a more temperate region still to the south, but are no doubt glad to find a retreat in the sheltered creeks and inlets of the northern part of Tierra del Fuego, where they can enjoy rest and quietness, which they could not find in the more boisterous regions of Cape Horn. The fact appears to be that a low mean temperature prevails throughout the year in

the southern seas : at Cape Horn the sun produces but little effect in the summer, and there is no intensity of heat for a few months as in the northern regions, owing, in my opinion, to the disproportionate expanse of ocean to that of land. The climate of the Falkland Islands corroborates this assertion : there it is mild ; the thermometer is seldom seen so low as 32° , generally ranging about 40° . Snow never lies there for twenty-four hours, excepting on high land ; the harbours are never frozen up, and the crews of vessels go barefooted with impunity ; and these islands are in about the same parallel as Port Famine, with a milder climate.

I cannot help thinking that the circumstance which occurred to Cook in his first voyage, has gone far towards confirming an erroneous opinion of the cold of these regions. It is quite inexplicable to me how Dr. Solander and a party who were ascending a mountain, (while the *Discovery* lay in the bay of Good Success,) could possibly feel the effects of cold as they did. We are told that he was seized with a torpor, the effects of the cold ; and that two black servants were actually frozen to death asleep. And yet here plants flourished !—they

lay before us. At the foot of the mountain we observed the little assemblage of houses called Cape Town, so well known to all who have visited this part of the world. It is seated at the base of the mountain which towers above it, and on the shore of the bay into which we were running. In the evening we found ourselves snugly at anchor at a convenient distance from it.

Those who are conversant with the history of this part of the world in the time of the early Portuguese navigators, will perhaps remember the following lines of Mickle's *Lusiad* :

At Lisbon's court they told their dread escape,
And from her raging tempests, named the Cape ;
" Thou southernmost point," the joyful King exclaimed,
" Cape of Good Hope, be thou for ever named !"

History informs us that when the Portuguese navigators of the fifteenth century extended their voyages to the southward along the coast of Africa, with a view to find a direct and easy route to the East Indies, under Bartholomew Diaz, in 1486, they encountered such a continuance of boisterous weather as obliged them to put back without effecting their object ; that when they returned to Lisbon, they gave such an

appalling account of the dangers of the cape which they had reached, its perpetual storms and mountainous sea, that it immediately received the name of Cabo Tormentoso. So forbidding a name it was destined to hold till the more fortunate Vasco de Gama, following the track of his predecessor Diaz as far as he had gone, soon doubled the formidable promontory, and led the way by sea to the golden treasures of the East. On the accomplishment of this glorious event, John, the reigning king of Portugal, transported with the prospect which it appeared to present of acquiring wealth and grandeur, emphatically named it the Cape of Good Hope. Nevertheless, the early fame of its boisterous seas has not suffered in after-times, and its haven is looked forward to as a refuge from them by vessels on their way to India. High are the expectations formed by the weary passenger of the rest he will enjoy at the Cape; and, tired of the continual sameness of a sea voyage, many an anxious enquiring look does he cast from the approaching vessel to the lofty mountain at the foot of which is the little establishment of Cape Town,

where he knows that he will find plenty of good cheer and a relief from all his wants.

So much has been written and said concerning the colony of the Cape of Good Hope, that one would suppose little remains to be told. Much, however, of what I saw I had neither heard nor read of. "*Africa semper aliquod novi offert*," was the language of Lucian, and the motto of Barrow in his excellent work on the Cape of Good Hope; therefore I shall not hesitate to add the few observations which I made, to the general stock of information concerning it.

The Dutch were the first to establish themselves in the colony, and in the year 1562 they built the first house where Cape Town now stands. In 1795 the fortune of war transferred the possession of it to the British. It was restored to the Dutch in the short peace of 1801, but was again taken by the English in 1806, and has since remained a colonial possession of Great Britain.

The effect produced on the mind of a stranger by a first view of Cape Town from the anchorage is generally not much in its favour. But

he is no sooner landed than any ill opinion which he may have formed is entirely removed by the extreme neatness, cleanliness, and general elegance of the place. There is, however, one drawback to this, which must not be omitted, and it is strange that the cleanly habits of the Dutch in general should allow of it. The filth and nuisances of the town are conveyed in carts to the beach, and left there to be carried off by the tide. Surely some better means of getting rid of them might be found than this, for the inconvenience arising from the custom is considerable.

Cape Town has straight and spacious streets, crossing each other at right angles, formed by handsome and genteel-looking houses, the roadway being constructed on the most improved plan of Mr. M'Adam. The town extends about a mile and a quarter along the shore of the bay, named, after the mountain, Table Bay. It contains about twenty thousand inhabitants. The houses are generally two stories in height, and are constructed with flat roofs in consequence of the violent winds to which the place is subject. They are built of stone, their exterior being either whitewashed or neatly stuccoed.

Many of them have terraces, or, as they are termed in the country, stoeps, before them. They are frequently shaded by a small row of fir-trees, which form an agreeable relief to their dazzling whiteness, and at the same time afford the advantage of a shady walk. The terrace-walks in front of the houses are generally the favourite lounge of the family in the evening or during the heat of the day, and at all times they afford an agreeable promenade. The rooms of the houses are large, lofty, and airy; but unprovided with any ceiling, the naked joists being seen with the floor above them. This is a peculiarity which is to be found in the most respectable houses of Cape Town. The floors are generally varnished, very few rooms boast of fire-places, and from the deficiency of chimneys, the aspect of the town, although an English settlement, is very different from those of England; a feature which at once would stamp the place as foreign to an Englishman. He would not believe that it is an English town until he found himself among its inhabitants. The houses are besides deficient of gardens.

The Heregracht, or Gentlemen's Walk, is the

principal and fashionable street of Cape Town. It is formed by a row of handsome houses facing the great parade, skreened by a fine avenue of trees. At one end of the Heregracht are the public gardens with their long vista of trees; at the other end is seen the water of the bay, with a vessel or two lying at anchor. This contrast of handsome houses and trees is rather pleasing; it is at once rural, elegant, and picturesque. The general character of the town is that of extreme neatness and regularity; everything wears an appearance of order and comfort in the highest degree, and it seems to be the abode of happiness and peace. At an early hour of the night "all is still" and retired. But it has no very attractive buildings, nothing to excite particular attention; and though a stranger cannot help being much prepossessed in its favour on a first acquaintance, and sets it down as abounding in comfort for its residents, yet to more active spirits it is wanting in bustle and amusements. The churches of Cape Town are few and obscure, and can only be mentioned as the sanctuaries of religion. The interior of the principal church is neat, and ornamented with wood carvings. Divine service is performed in

it first in the Dutch fashion to a Dutch congregation, and immediately afterwards the Church of England service is read to an English congregation. The number of places of worship in Cape Town is six, as follow: one Dutch church, one Lutheran, one Catholic, and three Dissident, besides two or three Mohammedan mosques. Some new English churches are erecting according to the modern style; and there is, besides, a college for education in the various branches of knowledge. Beyond the limits of the town are several cemeteries, but their naked and neglected appearance displays a disregard among the inhabitants of Cape Town to the sympathies of our nature. Probably I may think so from early prejudice, for I always have had a sort of esteem and veneration for a neat country churchyard. These cemeteries, it would appear, are for the residents of the town; for in the country it is the fashion to bury the people in the ground adjoining the houses.

The following are the principal public buildings of Cape Town.

The Castle—a pentagonal building at the south-east of the town, chiefly occupied by troops.

The Barracks—formerly the storehouse of the Dutch East India Company, a handsome range of building with a neat terrace in front.

The Exchange-room and Public library—situated on the Grand Parade. The former is a large capacious room, and the latter is particularly neat and elegant.

The Governor's house is situated near the public gardens, and is a humble-looking but perhaps comfortable residence for his Excellency. It obtains more credit by virtue of its name than it would by any description of it. The public gardens are small, but afford the luxury of a shady promenade. They are improperly styled gardens, being nothing more than a common gravel walk with a row of trees on either side, and these in a neglected condition. Attached to the part open to the public are a few cells containing a lion and lioness, a tiger and some jackals. There was formerly a considerable menagerie here, which is now considered as an unnecessary expense.

The Bank, Post Office, and Courts of Justice are all found together in a small range of buildings, not remarkable for their appearance, at the top of the Heregracht. There is, besides,

a tolerable gaol and a house of correction. The police is good and the town is well watched; but it is neither paved nor lighted. There are but few inns, and two hotels only; but there are several very respectable boarding-houses for families. There are fewer lanes and alleys, the haunts of pauper wretchedness, than are to be found in the purlieus of most towns. Pot-houses and gin-shops are by no means common; and I found no beggars of any kind, not even a suppliant for charity in any form, during our stay.

The shops are plain but good, and the prices of the goods are moderate. Business is commenced at an early hour and is regularly closed at sunset, a practice which is not only healthy but conducive to social enjoyment. The trade is principally with England, the Mauritius, and Rio Janeiro. The goods are disposed of before the merchant's door, in the open street, he being his own auctioneer. A merchant has generally two sales every week, and the goods sold are frequently knocked down at a low price.

The articles of manufacture produced in the colony of the Cape are few and immaterial;

they consist of a white woollen hat, used by the farmers. Some leather is also tanned with the oak bark, some sheep-skins are tanned with the bark of the acacia, and used by the country people for making jackets and trowsers. Soap and candles are made in small quantities and of an inferior quality. The Hottentots make very good mats and baskets ; and there are several breweries which produce a good wholesome beer. The Dutch are admirable wheelwrights, and turn their waggons out of hand very neatly and creditably.

The only place of public amusement in Cape Town is the theatre. The performance there must not be criticised, as it depends mostly on the efforts of amateurs ; but Dutch plays besides English are sometimes performed. Music and dancing are followed with much taste by the inhabitants, and some very delightful private concerts are given by the Philharmonics. Dancing is the favourite and general accomplishment ; and I know not whether to bestow the most praise on the slaves, or on the upper class, for their excellence in this fascinating amusement. For music the Hottentots evince

the most decided talent; they acquire new music with a wonderful facility and precision. But we must not forget to mention the races of Cape Town. They take place in October on Green Point, and of course attract the greater part of the inhabitants. They generally last three or four days, and are terminated by a ball.

Government-house, of course, dispenses the rules of fashion and etiquette to the colony. His Excellency Sir Lowry Cole, the governor at the time of the Chanticleer's visit, and Lady Frances Cole, were justly esteemed for their urbanity of manner and their kind attention, particularly to visitors. Their courtesy to strangers was the theme of every one, and the splendour of their entertainments was famed throughout the colony. The admission to these entertainments is very properly considered as a passport into the first circles; for here, as elsewhere, the line of demarcation is drawn in society, and the select few exercise a discretionary power as to their admissions.

" But I hate the talk of tittle tattle,
Which is the cud as chewed by human cattle."

The people of Cape Town are for the most part remarkably well dressed, which may probably arise from the cheapness of their provisions. The population is of a mixed character, English, Dutch, and Hottentots; having for their domestics Malays and negroes.

Cape Town is exceedingly well supplied with water by a stream from the Table Mountain. It is covered in from its source, and is preserved entirely for the use of the town. The water-works are under the control of a surveyor. There are about sixty-three water-cocks dispersed over the town for the convenience of the inhabitants. About two hundred houses have the water let on to them; and, from the great height of the spring, it is easily conducted into any of the apartments. A few minor streams also run from the hills through the town; and one of them, which runs towards the castle ditch, may be literally considered the great washing-tub of the town. The banks of this stream are literally covered with linen; and the slaves may be seen as thick as they can move on its banks, employed in pounding and pommelling the clothes on the rocks.

This process of washing is followed in other foreign towns ; but here it is a curious spectacle to see the immense numbers of black women, nearly in a state of nudity, many of them with infants at their backs, busily employed in the art.

Boat hire at Cape Town is enormously expensive ; the surf however is sometimes very dangerous, and therefore those who brave it have a right to demand a proportional reward. Coolies, or public porters, are stationed in the market-place, whose charges for hire are regulated by an order from the governor. Horses and vehicles of every description are readily procured at Cape Town ; but the former are full of tricks, and require care in their management. Sometimes persons may be seen at Green Point riding the zebras, which are brought from the interior, and generally kept at livery stables. A young one may be purchased for about £20. They are beautifully formed, and elegant creatures for a lady's chaise.

The public library reflects the greatest possible credit on the colony. It was established, I believe, at the recommendation and on the plan

of Mr. Barrow, the enlightened Secretary to the Admiralty. It is one of the principal ornaments of Cape Town, not in consequence of the beauty of its building, but from the vast number of useful books in every branch of knowledge which it contains. They are judiciously arranged, and are open to the use of the public on very liberal terms. The payment of a shilling for every pipe of wine imported into Cape Town, with the fees of the subscribers, are the sources of revenue on which the library is maintained; and its good effect on the people is very apparent. They are generally intelligent and well-informed. There are two papers published twice a week in Cape Town, viz. the Government Gazette, and the South African Advertiser. The articles are written in Dutch as well as English, for the accommodation of both classes of readers. The South African Journal is also published every two months, besides two almanacks of an excellent character every year.

Various are the methods of travelling devised and practised at Cape Town. Jaunting cars and gigs drawn by horses are not sufficient. Here may be seen the slow ox-wagon, the

light horse-waggon, with six or eight horses, carriages of four-in-hand, and a motley collection of country carriages. But the most amusing of all in the eyes of a stranger is to see children riding on huge goats, saddled and bridled as ponies. Horses are cheap; and, as their maintenance is by no means expensive, most of the inhabitants can boast of a travelling vehicle of some description. The Malays are reputed whips, and are considered the genteel coachmen of the Cape; but their dress by no means corresponds with our ideas of their avocation. They wear immensely high cone-shaped hats, which are certainly not in keeping with their exalted situations, and give them rather a ludicrous appearance than otherwise in the eyes of an Englishman. The Hottentots are good drivers also, and manage the light four-wheel waggons of the Dutch with great dexterity. These waggons are drawn by six or eight horses; and although they drive at a rapid rate, the ease and dexterity with which they manage them is surprising. Sometimes they will have a team of eighteen or twenty horses in one of these waggons. But the large ox-waggon, drawn by twenty-two oxen yoked

in pairs, headed by a Hottentot lad, and under the management of a Hottentot driver with a whip sixty feet long, is probably the most curious spectacle of this kind to be seen at the Cape. These fellows crowd into the town daily with the country produce in great numbers, giving signals of their approach by their noisy whoops and the loud smack of their whips, which echo through the streets.

But, as before observed, the Dutch are excellent wheelwrights. In all their vehicles there is neatness. The facilities for travelling show as much as anything else the superiority of one nation over another. Nothing can indicate more forcibly the character of the people of Monte Video than their clumsy, ill-constructed carts, travelling over the miserable roads of the country at a drone's pace, without the least desire on their part to improve either the one or the other. Here the native waggon is neatly made, the wheels are as good as the best in England, it is very comfortable as a travelling vehicle, and the finished seats and cushions, besides cover and curtains with which it is provided, give it at once a respectable appearance. In fact, the one is a ludicrous

burlesque, and the other a creditable specimen of art. Climate can have nothing to do with this apathy of the people of South America: Monte Video and Buenos Ayres have a similar climate to the Cape, and a far more fertile soil; so that the Spaniard has every advantage of the Dutchman at the Cape. Why then is he so far surpassed by him?

During the summer months of November, December, and January, the roads in the vicinity of Cape Town are crowded with teams of oxen bringing in waggon-loads of wine from the country. Each waggon contains two or three pipes, and some come from a distance of two or three hundred miles. This in fact is the busy season at Cape Town, and the streets are crowded with droves of oxen and long lines of waggons. The wine trade of the Cape forms probably the principal part of its commerce, and is carried on by a numerous and respectable body of merchants. The warehouses in which the wine is kept are remarkable for their neatness and order. They are long spacious buildings, containing two rows of immense casks, each capable of holding one thousand gallons of wine. The greatest atten-

tion seems to be bestowed on them ; they are nicely varnished, and each furnished with a neat brass faucet and spigot. The wine as it is brought from the country is emptied into these large casks, and kept there a year, according to my information, before it is exported. The following are the different wines made at the Cape : Red and White Constantia, Frontignac, Pontac, a sweet red wine, Hock, Sweet Muscadel, Steen Constantia, and Cape Madeira. About thirty-three pipes of Constantia are made annually, valued at about a hundred pounds per pipe. This favourite wine, so well known and appreciated in England, is used at the Cape as a liqueur. The quantity of Cape Madeira brought annually into the town is about ninety thousand pipes, and is sold there at from 1*s.* 6*d.* to 2*s.* per gallon. It is held in no great estimation, and is of a very fluctuating character ; nevertheless large quantities are exported and find a ready market. It is much used at the Cape, even by the higher classes of society, and is superior to that which I have met with in England. A considerable quantity of brandy, about six thousand gallons, is imported into Cape Town for the purpose of

improving this wine, the brandy made there being of a bad quality. It is generally allowed that the wines of hot countries are not so good as those of a milder clime ; but no doubt much depends on the nature of the soil in which the grape is grown. Thus, for instance, the very best sherry comes from a small district of Andalusia, where the grape is of a peculiar quality, which it cannot attain in places contiguous thereto with precisely the same climate.

The various stages of the vine at the Cape are as follows. In autumn they are cut down, leaving only a stem of two or three inches above the ground. During the spring they are pruned with great care, so as to obtain standard vines of two or three feet height. In October the vines produce their leaf, the grapes ripen in January, and in February is the grand season for making the wine. The vines generally yield an abundant crop, the grapes being of a rich delightful flavour, but there are no doubt differences which the palate cannot detect. From the refuse of the grapes and the weaker vines brandy is distilled. Some argol or cream of tartar is produced in the wine vats ; but by no means in such quantities as that

from the wines of France and Italy. The raisins of the Cape differ materially from those of Malaga. The pulp is softer and in smaller quantity, and the crystalline sugar is neither so abundant nor in such large masses. The grapes of the Cape are stated to be dipped in an alkaline solution of wood-ashes, and subsequently dried in the sun. This process may be intended to destroy the acid, and to free the saccharine and pulpy matter. The tartaric acid of the grape unites with the potass into the bitartrate. But soda forms a very different compound with tartaric acid; and I have observed that many of the Cape plants yield a quantity of soda in their ashes, arising from the prevalence of salt in the plains.

A large quantity of raisins are made in the Cape colony; and it is also celebrated for its dried fruits, as apples, pears, quinces, apricots, and peaches. The apples, pears, and quinces are cut into slices and dried by exposure to the air. They assume a light brown colour and become rather tough; but they are a tolerable substitute for the fresh fruit, and are very acceptable at sea. Apricots and peaches are split into two parts and thus dried. The dried figs

and almonds of the Cape are neither of them particularly good, but the green fig is a delightful fruit.

Wine has hitherto been the chief article of export from the Cape of Good Hope ; but it is the opinion of many respectable merchants that wheat will shortly become the staple commodity, and it has even lately been largely exported to the London market. I am told that it has obtained the price of five shillings per quarter above that of any other wheat, and it is said to average 68lbs. to the bushel. Although the wheat is so good, yet the flour is not so. This, however, arises from the mixture of sand with it, brought by the heavy south-east winds, which fill every crevice, so that at times both corn and flour are injured by it. The soft sandstone by which the wheat is ground also adds its portion of sand. Latterly, however, a great deal of attention has been paid to this important particular, in improving the structure of the mills and by using foreign stones. The bread we found at the Cape was very good, the grit being scarcely perceptible, and no injury or inconvenience appears to proceed from it.

Among the public buildings of the Cape the observatory should take the precedence, not only from its being an ornament to the place, but from the sublime and exalted nature of the pursuits to which it is dedicated. The visit we made to the Cape in the Chanticleer will always be remembered with feelings of veneration for the memory of the amiable director of that observatory by all who had the good fortune to know him. I consider the circumstance of my being employed accidentally (in being appointed to the Chanticleer), so as to have made the acquaintance of the late Rev. Mr. Fallows, as one of those bright moments of one's existence that memory loves to cherish, and the mind delights to dwell on. The efficiency of Mr. Fallows in his public duty has drawn forth the warmest eulogiums from that society of which he was once a valuable member; "in his death a severe loss was inflicted on science" is recorded of him; and there is one yet left who has the painful lot assigned to her of remembering all his private virtues, his widow, who shared his joys and assisted him in his arduous avocations. I cannot help quoting the following tribute to the memory of Mr.

Fallows from the memoirs of the Astronomical Society of London. By some means the large mural circle which had been sent out to the Cape received an injury which materially affected the very delicate observations of this instrument. Mr. Fallows, after a tedious perseverance, in consequence of the disagreement of the observations, arrived at this conclusion, that the axis of the instrument had received some permanent injury. The memoir says, "Before he had come to this conclusion, which seems to have been some time in the middle of 1830, sickness deprived him of the services of his assistant, Captain Ronald; and Mr. Fallows was left unaided to do the best he might with a transit and mural circle. He was relieved from this difficulty by the affection and intelligence of Mrs. Fallows, who offered to undertake the circle observations while he was engaged with the transit. A very little instruction sufficed to render her perfectly competent for this task; and the Cape astronomer, like Hevelius, had the pleasure of finding his best assistant in the partner of his affections. Some of his letters, written at this time, expresses a strong hope and confidence that he should at

length be able to justify the high expectations which had been formed of the observatory, and that his work would bear a comparison in accuracy, though not in extent, with that of any other establishment.

“But the labours of the observatory were too much for a constitution already much enfeebled by previous illness. He had suffered very severely from a *coup de soleil* soon after his arrival at the Cape, while fixing the small transit; and, besides some less serious complaints, experienced a dangerous attack of scarlet fever in the summer of 1830, from which he seems never to have fully recovered. In the beginning of 1831, his health was visibly impaired, but he could not be induced to leave the observatory before the equinox. Towards the end of March, he became incapable of struggling any longer with disease, and went to Simon's Town: but it was now too late, and he breathed his last on the 25th July 1831, in the forty-third year of his age.

“To those who were acquainted with Mr. Fallows it is unnecessary to dwell upon the integrity and simplicity of his character, or the depth and clearness of his understanding. As an

astronomer he had few rivals. Perfectly acquainted with the practical and scientific departments of astronomy, he carried into the observatory the same straightforward zeal and honesty which were the distinctive features of his private character ; and, if his life had been spared, would unquestionably have realised the most sanguine expectations of his friends and admirers."

A temporary residence as a guest at the observatory gave me an opportunity of seeing the arrangements of the building. It is a large elegant structure, situated between three and four miles from Cape Town, on a flat sandy heath. The central part of the building is allotted to the instruments, and the two wings form the residences of the astronomer and his assistants. It was erected under the superintendence of the late Mr. Fallows, at an expense of 30,000*l*.

The English law, with some modification, is that by which justice is administered in the colony. The severity of our penal code is much mitigated ; and whipping, besides solitary confinement, forms the principal punishment for

minor offences. The awful penalty of death is incurred only by the crime of murder.

During the stay of the Chanticleer three persons suffered this punishment : and in order to make it as terrible to the Malays as to the other inhabitants of the colony, it appears to be followed by the process of beheading the culprit. This the Malay regards with insuperable horror; for by his faith he anticipates admittance into paradise, and if his body is not maimed, he fancies himself certain of finding favour among the ladies of Mohammed's sweetly-peopled sky. But if he goes headless from this world, he is told that he will wander about the happy regions the scorn and contempt of all, which he considers the bitterest punishment that could be inflicted on him.

On the public road, about four miles from Cape Town, are fixed the heads of three Malays, who were executed for committing some dreadful crime some time ago ; and they are left there in order to deter their countrymen from similar acts. These people are by far the most intelligent and useful of the slave population at the Cape. They are valued for their sobriety ; but this good quality is counteracted by the com-

mon custom among them of making a harem of their master's establishment.

In Cape Town there are two or three small Mohammedan mosques. When Dr. James, the bishop of Calcutta, landed at this place on his way to India, to fill the office of the lamented Heber, the Malay priests waited upon him with a complimentary address, respecting the beneficent object of his mission ; requesting him at the same time to assist such of their countrymen as he might find in distress, and to rebuke in their name those whom he might find breaking the laws. These priests were much gratified by their interview with the bishop, and highly impressed in favour of him : previous to his departure, and some time after, they offered up prayers and supplications in their mosques to Ali, that he would vouchsafe his blessing on the holy man, and grant him a safe passage across the blue waters. It was singular that a Christian bishop should have prayers offered up for him in a Mohammedan mosque, while the churches of his own religion were silent on the occasion and heeded it not !

In so distant and outlandish a place as the Cape colony, it is not to be expected that inns

or taverns are common on the road. But the primitive genuine hospitality of the Dutch farmers, scattered over this immense tract of country, amply compensates for the deficiency. In the house of the Dutch farmer every traveller, be he who he may, finds a welcome, and he is the most favourite guest at his table who accepts it cheerfully and without restraint. Let him discard all ceremony, and take his seat without reference to any one—let him help himself to what he most likes—let him eat heartily and drink freely, and let him smoke his pipe and abuse the slaves in their turn, and in the estimation of the Dutchman he is the right sort of man. The most genuine, but at the same time the most unpolished kindness, marks the character of the Dutchman at the Cape; and no such thing as delicacy or refinement of manners is to be found at his table.

The Dutch farmer lives in a lonely sequestered vale, rich in flocks and herds, and abundantly blessed with the means of good living. Sometimes, like a patriarch, he presides over a family of eighteen or twenty children and a vast retinue of slaves, when his station is one of no mean order. He sits at the head of his

table with his hat on, his pipe generally stuck in it by way of ornament. Previous to dinner a small tub of water is brought to him, in which his face, hands, and feet are washed. The tub is then taken to the next in importance in the family, who is generally the eldest son or the mother, who go through the same process; and afterwards the whole group do the same in their turn. After this is concluded, a little boy, generally some adopted or favourite slave, stands up and chants a long poetical grace, to which the most respectful attention is paid, and the repast commences. No one can stay too long at the house of a Dutchman, nor can he ever wear out his blunt hospitality. When you talk of leaving, the boor is distressed, and immediately asks with the utmost simplicity, "An't I nice?—An't wife nice?—An't slaves good?" If business be advanced as the excuse to go, he urges you to stay with "Never mind the business now, do it another time." If you still persist, he is sorry; concern and regret are expressed by the whole family; and his slaves are drawn up to witness your departure. He expects no other acknowledgement of his attention than a pinch of snuff to each of the

slaves, who, when they get it, immediately commence rubbing their teeth with it.

The Dutch at the Cape appear to agree with the Spanish proverb that "haste comes from the devil," for they are most dilatory persons in transacting business. If a Dutchman calls on a person there, and you ask him about the health of his wife, give him some refreshment and plenty of conversation, the probability is that he will go away without transacting the business he came upon. He departs highly satisfied with you, and calls you "a nice man," and even "a Christian man."

The composure of these people under accidents and annoyances is very remarkable; they are certainly the most resigned and patient class of beings under the sun. If their waggon should stick fast in a kloof, as the morass is called in the colony, or in the sand, the Dutchman betrays no impatience; he quietly takes off his oxen, and lets it remain with the utmost composure for as many days as may elapse until another waggon or a team of oxen comes to his assistance, and extricates him from his difficulty. The Dutch women are generally lively and affable, and own as good-natured faces as ever were moulded.

CHAPTER XIII.

A trip into the Country.—Reception at a farm-house.—Bees.—Garden.—The Kraal and its keeper.—Cuds of bones.—Cornucopiæ.—Sheep's tails.—The dormitory and its accompaniments.—Dutch mode of living.—Crocuses.—A Hottentot dance.—An egg newly laid.—Sir John Truter.—Effects of generosity.—An expected feast.—Hottentots, their character and peculiar habits.—Poisoned arrows.—Method of killing the Ostrich.—Comparative Anatomy.—Good works of Missionaries.

ON the 3rd of November I left Cape Town on a visit to an English gentleman, who had married into a Dutch family, and lived a short distance from the town. The first few miles of the road the travelling was excellent, till we turned out into a dreary and barren sandy country called the Flats, which in some degree resemble the barren heath tracts of England. The sand appeared to be as pure as if it had just been washed, and was covered with a scanty vegetation. The part we travelled over was intersected by cart-tracks, which, with the broken

surface of it here and there, not unfrequently risked the upsetting of our light vehicle. Nor were the tracks of any use to us, for more than once we should have lost our way had it not been for the knowledge of the driver, who, by the by, was rather puzzled now and then.

After rather a tedious journey we descried a house in the distance, which, I was informed, was the habitation of which I was in search. As the vehicle drew up to the door, the attention of the slaves was attracted, and there seemed to be an eager inquisitiveness as to what manner of person I might be. Shortly, however, I was met by the owner of the house, and greeted by the smiling face of a fine old Dutch lady, who, I afterwards found, was his mother-in-law. The old lady received me with great kindness on my being introduced to her, and we very soon became acquainted; indeed a very short time was necessary for rubbing off the shyness of a first interview between persons circumstanced as we were.

The first thing that attracted my attention was a swarm of bees that had attached themselves to the parlour window, occupying the space between the shutter and the glass. On

enquiring about them, I found that they had taken a liking to the situation for several years, and always persisted in swarming there, although repeatedly driven away. After the fear of being stung by them was got over, I contemplated the labours of these little creatures with much pleasure, and they frequently afterwards occupied my attention. They are much smaller than our bees, and appear to be far less irritable, and I was informed that they work during the whole year. They kept the house well supplied with honey, the comb being taken away about eight times in the course of the year, or about every six weeks. The hexagonal form of their cells did not seem to be the result of pressure, and were all of the same form both at the top and the sides. In the course of my observations of them, I frequently saw them removing a portion of wax from one part of the comb to another.

It was not long after my arrival when dinner was announced, and we proceeded forthwith to discuss the good cheer which had been prepared. In the afternoon we strolled into the garden, an enclosure formed by lofty myrtle hedges. It abounded in flowers of various

kinds, which owed their fine condition to the moist nature of the soil. The double-flowering pomegranate first attracted my attention; elegant and beautiful as the flower appeared, it yielded no fruit. A person of a fertile mind would immediately compare the failing with that class of persons in society who are termed double-faced: their appearance, he would say, is specious and winning enough; but they are deficient in good deeds, as the double pomegranate is of fruit.

A bower in one part of the garden, formed by flowering myrtles and the luxuriant vine, thickly studded with clusters of grapes, and profusely ornamented with the rich passion-flower, afforded a delightful retreat from the heat of the sun. A profusion of roses and geraniums met the eye in all directions, and at some distance without the garden was a sedgy mere, full of reeds, from many of which depended the nests of finches; a method which this bird instinctively adopts to secure itself from the attacks of snakes. Besides flowers and fruit, the garden contained a great variety of esculent vegetables, all of them beset with the green louse, which afforded the slaves ample employment to destroy by

washing the plants with butter-milk. The *coccus*, or ladybird, however, had begun to clear the stems and to diminish the numbers of the insects. The prince's feather is commonly used as a salad.

The *cannabis sativa*, or common hemp, called by the natives in the colony *dakka*, is much cultivated by the slaves, and is used by them in smoking as a substitute for tobacco. This plant has a remarkable inebriating effect, insomuch that it was forbidden to be used among the native troops. Medical men might turn their attention towards ascertaining the particular virtues of hemp, as it might prove a useful auxiliary in the *materia medica*. I tried a tincture of it in a few cases ; but the very limited practice of a small ship affords little or no opportunity for ascertaining the virtue of any new specific. In plethoric cases it was productive of headache, and it appeared to possess a narcotic power.

There is no place, perhaps, in the world, where the people manage their oxen, and train them to useful purposes, better than at the Cape. The kraal forms an important part of the establishment of every farmer ; and each ox in it hath his name, and knoweth well the voice

of his master. In the evening I witnessed the folding of the cattle by the Hottentot herdsman. This original son of the soil, like the rest of his brethren, had made his little fire of sticks outside the enclosure to cook his supper, and, like a good shepherd, was preparing for his usual bed by the side of his flock. It is the custom of these persons to wrap themselves in their mantle of sheep-skin, and lay themselves down to rest with no other canopy than that of the sky. The cattle of my friend appeared to be of a large breed, and were valued by him at thirty shillings per head, of which sum the hide was considered as worth twelve shillings and the horns worth eighteen pence. To my great astonishment I found the beasts champing bones and relics of their own species with avidity; and I was informed that their fondness for them is such, that they will chew them for several hours at a time. It is supposed that the acidity of the coarse saline herbage on which they subsist gives them a relish for some alkaline earth which the bones supply.

The horns of these cattle, as is the case with those of the Cape in general, were very large, being equal in size to those of the Abyssinian

ox. I have frequently seen them a yard in length, and six or seven inches in diameter at the base: they are said to be capable of holding four or five gallons of water, and even to contain a bushel of corn, but I never tried the experiment. At all events, they might well be considered there as the veritable cornucopia.

The caffre servants, or herdsmen, are fond of twisting the horns of their young cattle into all kinds of fantastic shapes, and they carry their concern for them so far as to polish them in a very ingenious manner.

But the horns of the cattle at the Cape are by no means so extraordinary as the tails of the sheep. Every one has heard of the immense tails of the Cape sheep, but the formation of them is not so well known. They consist of a mass of very nice sweet fat, which is exceedingly useful for domestic purposes, and consequently is much prized by the Dutch. This mass varies in its weight from eight to even twenty-five pounds, but the average is about ten. The sheep are the *laticauda*, or broad-tailed kind.

The amusement of the garden and the fold made the time fly rapidly, although, to be sure,

between the two we had tea and home-made cakes of an excellent quality. At nine we were summoned to a hot supper, which was finished with a *sopi*, as it is termed, or, in other words, a glass of cordial, or else some Cape wine. After this was concluded I retired to rest, being rather fatigued with my journey, and was ushered into an outhouse by an attendant slave.

When I was left by myself, I could not help remarking the extraordinary stillness around. Accustomed as I had been to the busy active scenes of a ship, where something incessantly is going forward, where even the stillness of midnight is invaded by the walk of the watch on deck, and the voices of the sentinels now and then, the silence of my new abode absolutely startled me. But my attention was soon attracted by the novelty of my apartment. There was ample space in it; far different to the cooped-up cabin of the Chanticleer. The walls and floor were formed of cow-dung, and the odour arising from it was yet strong, so that I thought, if such a thing was healthy, as it is considered by some, that I should have it now in perfection. The brown walls had a sombre appear-

ance, which was rather relieved by a gay festoon edging.

A small dressing-table was placed in the window, covered with a large white napkin fringed with lace : and a bouquet of roses and stocks added their perfume to the apartment. The bed was neat and clean, the pillow-case was made principally of netted lace, and the sheets were scented with fragrant herbs.

Notwithstanding all this, I passed a restless night, which daylight accounted for in discovering to my astonishment a host of fleas ; and I had the mortification to find my face and body in a condition resembling that of a person with the scarlet fever. Their numbers were such that my clothes were darkened by them ; and I could account only for the immense quantity in which they appeared, by supposing them to have harboured in the crevices of the dried cow-dung walls and floor. Such a substitute for mortar may be a healthy one, but I would forego even that, rather than pay the penalty it inflicts by its accompaniment.

I found out another secret also in the morning, that served in some degree to unravel the

mystery. This was no other than the cackling of fowls in an adjoining room, into which there was an entrance from the one I occupied. So that, besides the lawful inhabitants of my own apartment, I had the additional company of the emigrants from a well-stocked hen-house.

About six on the following morning a slave brought me a cup of coffee, esteemed by the Dutch as a good stomachic. This is the first meal of the many which they take in the course of the day. At nine they breakfast, for the coffee beforehand, whatever may be taken with it, goes for nothing, and it is a substantial meal of eggs, fish, meat, bill tongue, or venison ham, besides the usual potation of good tea; this, which one would consider sufficient to last them till the evening at least, is followed at eleven by what they call a tiffin, meaning a luncheon. Dinner is served at two in the afternoon, consisting of plenty of all sorts of provision. Coffee is handed round at half-past three with delicious sweetmeats, which it is the custom to eat with tiny silver forks. At six they assemble to tea; and a good hot supper at nine closes the list of meals, which in the course of the day an honest and hospitable Dutch

family impose on themselves. No wonder they become stout, with rubicund faces, or that the gout is a common disease among them.

A day or two after my arrival, I joined a party on a tortoise hunting expedition. We embarked in an ox-waggon, which, for its easy slow pace, is probably superior and more comfortable for such a purpose than the light horse-waggon. We repaired to a shallow lake in search of the tortoise, but were unsuccessful; and were rewarded only by some young ducks and land-crabs. The tortoises are caught by hand with great ease and facility, and a good soup is made from their flesh.

Among other vegetables at the Cape, the farmers make a dish of the bulbs of the *iris edulis* or eatable iris, about the size of a crocus root. When simply boiled, they taste very much like a chesnut or waxy potato. No doubt, among the numerous bulbs of the Cape, many might be found very good for the table, but an opinion has got abroad that they mostly possess some noxious quality. At Aleppo and its neighbourhood, crocuses are cultivated in great variety; and the Arab women carry them with other flowers along the streets for sale, chaunt-

ing, "Behold the beauties of spring—how delightful its season—its Maker how bountiful!" Dr. Russell informs us, that the roots of one species are eaten by the inhabitants and called mountain cucumbers. He says, they are strung like onions and sold in the markets. Their flavour is considered something like that of a nut.

One evening during my visit, the lady of the house was determined that I should have a treat, as I had never witnessed a Hottentot dance. Accordingly, the whole of the slaves were assembled in the hall, amounting to about twenty in number, accompanied by their musician, who soon seated himself on the earthen floor and commenced tuning his gorah. The gorah is an instrument well known in Africa, and is a rude attempt to imitate the guitar. It is formed of part of a calabash, and has three strings of dried gut; but I believe the number of strings varies according to the taste or the tact of their owner.

The Hottentot who performed the part of musician was an old grey-bearded slave, and appeared to enjoy his profession, and to acquit himself in the management of his gorah with

as much skill and feeling as the old harpers were wont to do in former times in our own country. After the introductory process of tuning was completed to his satisfaction, he commenced a lively indescribable sort of music; and I observed that he frequently breathed on his instrument, working his head as actively over it as a player does on the pandean pipes. And he also carefully adjusted it for each separate dance. As for the music itself, I can say little of it, except that like Neil Gow's fiddle; which used to make the Scotch lasses kick their heels about in spite of themselves, the effect of this was much the same after the fashion of the Hottentots. They all of one accord set to work making a most ludicrous shuffling, which I was informed was their national dance.

I had often heard, and indeed believed, that simplicity was the highest effort of art; if so, here we had it in perfection, for nothing could be more simple than the dance of these Hottentots. It consisted merely in a quick beating of time with the feet without any change of place, consequently there is no figure; and it is very accommodating in point of numbers, suiting ten or a hundred persons alike. There

is neither grace nor elegance in the movement of the person, but exertion sufficient to make the presence of the dancers by no means desirable. In fact, the room was soon filled with the disagreeable odour of their persons, and the noise of their feet sounded more like the trampling of horses than anything else to which I could compare it. Some were grasping the door-post and keeping time to the music most earnestly ; others were supporting the weight of their bodies by leaning on the back of a chair, which enabled them to show off their activity to more advantage ; and others again were footing it away in the most persevering manner, as if they were determined to wear out the old musician rather than give over, and indeed there was every chance of their succeeding, for every one might leave or join the dance without interrupting its progress.

A little of this was quite sufficient, and the only satisfaction I derived from it was that of seeing the poor creatures enjoy themselves : however, as the dance had been performed for my amusement, I considered myself in honour bound to reward them with a trifle of money ;

and we all separated quite satisfied with each other.

On the following morning I rose early and sallied forth to enjoy the fresh air. I had not been gone very long, when, returning to take my coffee, which had been left on the table to cool, I was rather surprised on finding it upset, and in the middle of my bed, to my great astonishment, was a new-laid egg, yet warm ! The fact was, that I had inadvertently left my room door open, and my neighbours, the fowls, had taken the advantage of their good fortune and found their way into the apartment ; so that, while some were making free with the contents of the table, another, more considerate, had left me a new egg for my breakfast !

In the course of the day we paid a visit to Sir John Truter, an old resident of the colony, whom we found surrounded by his sons and daughters, all married and residing in neat small houses on the old gentleman's grounds. It was customary for them to assemble at the dinner-table of Sir John every day ; and it was impossible to witness the unanimity and har-

mony that prevailed among them all without the most gratifying feelings. I believe the Dutch have the character of bringing up their families with great care and affection, and instances of this patriarchal old gentleman are not uncommon at the Cape. The visit passed off with nothing remarkable, except I remember that Lady Truter had taken a notion that there must be great distress in England, on account of the number of vessels that arrived at the Cape bound to Swan River!

In the evening we returned home in my favourite bullock-waggon, and on our arrival found the house to our astonishment filled with a most agreeable perfume. We soon discovered that the Malay slaves had been celebrating their sabbath, for it was Friday, when they invariably burn sweet-scented herbs, to drive away, according to their ideas, the devil and his imps. This was all very well; but on the following day the whole house was in an uproar and everything in confusion. Some of the slaves were out of the way and not to be found, and those who were in the house attempted in vain to perform their duty; it was all of no use, for they were drunk; and the mistress of the house was obliged to

prepare the breakfast. I little thought, when I first heard the noise, that I had been the cause of it all ; but I soon learnt that it had been produced by my generosity on the evening of the dance. As soon as some of them recovered from their happy condition, they asserted with the most innocent faces imaginable, that they had only been drinking " the bloom-sucker's health in a glass of brandy-wine ; for he was a brave, good man." So that I had purchased my new name, as the " flower-fancier," during my botanical researches, without being aware of it.

However, I must give them credit for acting in unison with their words, for their behaviour to me always was most attentive and kind. In fact, during the week I passed at the house of my friend, every one seemed to feel they were not doing sufficient for me. The lady of the house was most accomplished, and, being a proficient in music, I had a treat to which I had long been a stranger. It may well be supposed that at the end of that time I took leave of my friends with regret, perhaps never to meet them again.

A day or two before I left my friend's house

one of the oxen was so unwell as to be unable to leave the kraal ; and a large, savage-looking black dog, named Caffer, a fellow that I had always studiously avoided, had taken up his position outside the enclosure, which nothing could induce him to leave. I was at a loss at first to conjecture what it was that riveted the animal to the spot in this extraordinary way, for I could see nothing that would probably engage his attention. It was not long before my curiosity was satisfied, and to my astonishment I found it was nothing more than an expected feast on the unfortunate ox as soon as he might die. It was a sort of an acquired knowledge of the animal, but from what circumstance I am at a loss to conjecture, unless it was his fine scent. But he reminded me of the officious and interested kindness of civilized society when a point is to be gained ; such, for instance, as that of expectant friends towards declining age—one of death's nuncios.

The Hottentots, those rightful owners of the soil by primogeniture, are so mixed up with the motley group of society about them, and their manners and passions thereby so much influenced, that it is difficult to detect their natu-

ral habits. They are a small race of people in point of stature, and certainly are not possessed of the handsomest features I ever beheld: but they are capital herdsmen and shepherds, excellent guides over the trackless deserts, and are gifted with such an acuteness of vision, that they can discern easily a bird on a bush, or an ostrich flitting along at the distance of the horizon. They have a good taste for music, and will catch the air of a song with much facility. They prefer a wandering life, and have no fixed habits of industry; and they certainly are not far removed from the lowest state of uncivilized man. They are careless and quite indifferent as to what they eat; and devour alike snakes, ants, or lizards; they delight in the blood of animals and drink it with avidity, and afterwards make a luscious broth of the paunch and its savoury contents. The bulbous roots and wild berries yield them at times a precarious meal. They grease their bodies all over to protect them from the scorching heat of the sun, and scent themselves with buchu (the diorma) *

* The leaves of most of the species of diormæ have an agreeable fragrance, and the Hottentots use them medicinally as well as to perfume themselves.

and they employ the feathers of the ostrich as a parasol.

They use their bows and arrows with great dexterity, and display much ingenuity in the construction of this primitive weapon. The barb of the arrow, which is poisoned, is formed of iron, obliquely serrated about an inch from the point, and here the poisonous matter is placed, having generally the appearance of black paint. It is composed of the liquid obtained from the poison-bag of their most venomous snakes, and combined with the juices of the most deleterious plants. Beneath this poisonous mass a few spiculæ of bone are fixed to the arrow, in such a manner that they may irritate the wound it may occasion, by which the part may be more effectually inoculated. A little distance from this the arrow is cut so that it will break on the least attempt being made to withdraw it from the body, leaving the barb with its poisonous matter buried in the wound which it occasions. The Hottentots shoot these arrows with great force, sending them sometimes even through the body of an ox; but they use them principally against the ostrich in the following manner: When they

discover an ostrich's nest, they dig a pit in the ground at a convenient distance from it, but generally pretty near, and sufficiently large to contain one person. In this pit the archer takes his place with a dog, keeping a good look-out for the return of the ostrich. As soon as the poor creature is discovered, they let loose the dog, which is generally trained to his business, and he immediately scampers to the nest, and begins disturbing the eggs. In the mean time the ostrich under all sail arrives at the nest, and a battle immediately ensues between her and the dog. It is now that the concealed Hottentot watches his opportunity ; the unfortunate bird falls pierced by an arrow, and becomes the prey of the archer.

The Hottentots are said to be very bad servants, and much addicted to thieving : they are looked on at the Cape as a most inferior class of beings, and deficient in intellect. In the South African Museum of my kind and learned friend, Dr. Andrew Smith, (who as a comparative anatomist and a zoologist was inferior to none but Cuvier himself,) I was shown a variety of stomachs from the different tribes of Indians. Dr. Smith used to say, that if he

were shown a perfect stomach, he could tell immediately the nation to which its owner had belonged. He was averse to showing his collection to every one, because it led to the conclusion that there were different species of men; and from less distinctive marks in animals, without hesitation we stamp them as of different species.

The fashion of attending to the internal structure of animals as a guide for specific distinctions, is certainly an obscure mode of improving zoology. Besides, it is at variance with the established principles. "Every organized individual," says Cuvier, "forms an entire system of its own—all the parts of which mutually correspond and concur to produce a certain definite purpose by reciprocal reaction, or by combining towards the same end. Hence no modification can be effective in any one member of a series, without affecting all the others in a greater or less degree."

And it is on this principle that Cuvier has proceeded in his elaborate researches on organic remains. Not that I am a believer in his *dicta* on these points; nor do I believe that he can reconstruct an extinct species from an entire

skeleton, much less from a few fragments. But I think that the external marks and organs of the animal kingdom form as sure and as natural distinctive marks as their internal organization either whole or in part; for if the internal parts differ, so must the external in the same ratio. The Hottentot's stomach differs as much from ours as the Hottentot's head does from that of the European. Then, why should we infer the disparity of one organ and not the other? Is the Hottentot's stomach inferior to ours? Does it digest food less perfectly? Why should his head be esteemed so inferior? If the mind is the result of the senses, the Hottentot has the external senses in perfection. He sees further than the European by the force of habit. He has an excellent ear for music, and with it a melodious voice. At the missionaries' institution at Theophilus, the chorus of their soft voices is remarkably imposing. All his external perceptions are as acute as ours; not that they form the mind, which is an emanation divine and immaterial, old-fashioned and ridiculous as the assertion may appear.

The sons of Africa are regarded by some as

the descendants of Ham, whose progeny were to be in perpetual bondage, and the "servant of servants," to the end of time. This really seems to have some analogy with the prophecy respecting the Jewish nation, and presents a remarkable fulfilment of what is foretold in Holy Writ. Turning from the natural to the moral consideration of man, we must regard the Hottentots as affiliated brethren to whom we are bound in Christian duties. And here it is with satisfaction that I record my admiration of the labours of the missionaries—men who, in a truly evangelical spirit, brave all kinds of perils and hardships, and even death itself, not through a prospect of temporal gain or glory, but through a desire to ameliorate the condition and save the souls of barbarous and suffering nations. The dauntless enterprises—the fearful peregrinations of many of these virtuous men, if properly appreciated, would be found to vie in romantic daring with the heroic achievements of chivalry, excited by a motive of a purer and far more exalted nature.

By the exertions of the despised missionaries new fields of discovery have been opened to the philosopher. They have penetrated into

regions which other travellers never reached, and have explored parts before unknown. They have presented man under circumstances the most peculiar and interesting in which he can be contemplated ; they have added new facts to his natural history and new features to his physical character ; they have added fresh languages to the list of those already known ; they have opened new places of refuge for our fleets and new channels for our commerce ; and they have multiplied the friends of their country.

Apart from Christianity, the labours of these men must be interesting to the philosopher, the politician, and the philologist ; and to hold such men up to scorn is no less a violation of good taste than of proper feeling and principle. By them the kraal of the Hottentot has been supplanted by the well-built village ; and the missionaries at Theophilus, (an inland establishment,) have instructed the natives in the Christian faith, and have pretty well succeeded in making a useful class of labourers and citizens. They have collected the dispersed wanderers, have procured land for them, and have taught them to cultivate it. Surely there

is a conquest over the human mind that conciliates all it subdues, and improves all that it conciliates.

A French ship was wrecked while we were at the Cape on the coast of Caffraria. Five only of her crew reached the shore, and they were moreover plundered and ill-treated by the savages; in fact they were made slaves. A missionary in the interior hearing of the event immediately hastened to their succour; he succeeded in liberating them from the natives, and took them under his protection; he gave them every assistance in his power, and passed them across the desert from one missionary's house to another in safety, till at length they reached Cape Town. And this was a journey of a thousand miles across a barren desert country, in the midst of rude and lawless tribes; but these tribes paid more respect to the voice of the missionary than they probably would to the sword. Here was a triumph!

To succour the distressed, to relieve the afflicted, and to turn the unruly wills and affections of sinful men to "the wisdom of the just," is the missionaries' grateful task. Their houses in

this colony are as beacons in the desert and watch-towers for the shipwrecked mariner, the asylums of the distressed and the abodes of peace. These holy men are the first to extend and the last to withdraw the boon of charity and the right-hand of fellowship.

CHAPTER XIV.

Newlands and country-seats.—Farms at the Cape.—Heights of land.—Ascent of the Table Mountain.—View from the summit.—Geological formation.—Speculations concerning it.—Comparative vegetation.—Beasts and Birds.—The Pelican's tricks.—Ostriches and Butcher-birds.—Snakes, their poison and method of invading nests.—The Chameleon.—Sun-fish.—Change in the colour of the water.—Robben Island.—Simon's Town.

THERE are several pleasant and genteel villas in the vicinity of Cape Town, among which Newlands, formerly the seat of Lord Charles Somerset, is preeminently beautiful. It is said that it cost £70,000 when first built, and was sold for £3000, being on too large a scale and too expensive an establishment for a private individual who would make his abode at the Cape. It will repay the visitor the trouble of going to see it.

Constantia, the place from whence the celebrated wine comes which is so highly appreci-

ated, is a farm at the distance of an agreeable ride from Cape Town. George's Half-way House is a retired retreat for invalids ; but the ride over the kloof and round Green Point is the favourite resort of the inhabitants. Hellenboch is the prettiest village in the vicinity of the Cape. There is a conveyance by a light waggon to it once a week.

The country about Cape Town is indeed mostly barren and unprofitable ; and it is by no means remarkable either for fine scenery or pleasant walks, hemmed in as it is on one side by the Table Mountain and the sea, and on the other by a wide expanse of dreary sands. Little or no agricultural produce is obtained from the neighbourhood of the town ; it generally comes from a distance in the interior. The farms of the Cape are large and straggling ; and though the agriculture is said to be bad, the Dutch farmers are averse to change, or to the introduction of what are considered modern improvements.

Some ingenious speculators in the soil, who have been at work lately, have not succeeded so well as those who have pursued the old-fashioned system ; so that if results are to be consider-

ed as proof, the Dutch must not be condemned too hastily. The wheat is sown on the surface and ploughed in, and the corn is trod out of the ear by the feet of oxen. No grass hay is to be found at the Cape; but the green oat is cut and used as fodder for horses. The hay-harvest is in October, the wheat in December, and the vintage in January and February. The farmers at the Cape have to bring their produce to market from a great distance, some even three or four hundred miles, over sandy heaths on which no roads have been made, so that most of the profit they would otherwise make is thus consumed.

A word or two may now be said of the geological structure of the Cape, and I have no hesitation in calling it a sandy district. The rocks and the mountain masses are principally sandstone, of which the Table Mountain is a fine illustration both in form and structure. Any one who has once seen the Table Mountain of the Cape of Good Hope cannot possibly forget it. From Table Bay it appears towering above the little town at its base in majestic grandeur.

There is a gradual and easy rise of about five

hundred feet from the town to the base of the mountain, from whence it rises abruptly, like the side of a wall, to the height of three thousand six hundred feet above the sea; and it appears, from the anchorage, to embrace the town in its curved-like shape. The summit is formed by a broad fillet surface. The height of the mountain is frequently the subject of enquiry, but few ever think of its length, which is about a mile-and-a-half. On the south it slopes off gradually towards Hout Bay. To the south-east of the Table Mountain is a lofty peak called Devil's Berg or Devil's Mountain.

On the opposite side, or to the north-west of the Table Mountain, and separated from it, is the Lion's Head, from which a long sloping hill of less elevation runs off, called the Lion's Rump, or Signal Hill. The height of the different mountains at the Cape are as follows: Table Mountain, 3600 feet: Devil's Mount, 3360: Lion's Head, 2200: Lion's Rump, 1100: On the Lion's Rump is a signal-post, which commands a view in clear weather of fifty miles around.

In nearly the middle of the Table Mountain there is an ascent formed by means of a cleft in

the face of it, by which the good people of Cape Town visit the summit, and certainly by the shortest path, notwithstanding its frowning and forbidden aspect in that direction, which appears to defy at once all the scaling-ladders of Europe. In fact, to perform this very feat is the object of most of the picnic parties at the Cape. It is certainly rather fatiguing, but then there is more credit in performing it; for a little difficulty here and there is the best thing in the world in these expeditions. A small stream issues from the top of the Lion's Head over a slab of granite, and comes tumbling down the mountain, turning a mill in its course, and by the side of it is the path. This is by no means the best that I have ever seen, and it is a matter of no little difficulty to keep it among the rugged rocks.

After quitting the town, the ascent to the mill-house is easy enough, but afterwards it becomes a different matter. The vegetation along the course of the stream is most luxuriant; and here and there are a cluster of silver-trees, the *protea argenteas*, presenting a beautiful prospect from the bay. The mill is the last house on the road; and not far above it is the

second waterfall, over a brown sandstone rock ; and soon after the ravine is entered by which the ascent is made. It is narrow, the sides in some parts approaching pretty close to each other, and for the most part as vertical as a wall, affording in their broken recesses shelter for numerous large black monkeys. These fellows, as they sit perched on the ledges of the rocks, by their curious attitudes and grimaces seem inclined to dispute the passage of a visitor ; and they are frequently in such formidable numbers, and so determined, that it would be impossible to pass them without the aid of some good stout cudgels.

As soon as the summit is gained, the trouble of doing it is well repaid by the magnificent prospect around. The vast expanse of ocean, which here and there appears to mingle its waters with the clouds on the scarcely visible horizon ; the distant mountains, the outlines of which are feebly pencilled on the ethereal blue of heaven ; on one side Cape Town spread out at the foot of the mount like some child's toy of a village ; and on the other, Simon's Town, much less from its greater distance : this, and more than can be described, fills the mind with

awe and admiration. The top of the mountain is flat, and towards the southern part of it is some little vegetation, besides bushes which are extremely convenient for the purpose of making a fire; but, in addition to these, there are stems of much larger trees than are to be found growing there. There is also abundance of water to be found on the summit.

It is said that there is good shooting on the top of the Table Mountain, as it abounds in rock rabbits and baboons, besides stink-cats, probably no very desirable game after all; but I did not make the experiment. It was contemplated by Mr. Brett, the owner of the mill, to obtain the grant of the summit of Table Mountain, for the purpose of cultivation. This gentleman considers it well adapted for Indian corn and potatoes, and, in some parts, even the vine; and I believe his opinion is the result of some experience, for he has tried them on a small scale.

The principal annoyance it appears to which one is subject in visiting the summit of Table Mountain is, that of being overtaken there by a south-east wind. This unwelcome breeze brings a chilly atmosphere from the cold regions

of the south, and immediately produces a dense mist, which obscures the view. A party caught thus, if they are not very careful in making good their descent from the mountain, very easily lose their road and are soon bewildered. Indeed, accidents are known to have happened from this very cause, by which persons, having lost their way coming down, by one false step have been precipitated from the mountain and killed.

The Table Mountain is composed of a sandstone of many colours, but chiefly of white granular quartz, passing in some places into quartz rock. The mountain rests on a granite base, which is passed at the waterfall a little above the mill, and at the elevation of five hundred feet above the sea. There are vast blocks of granite in Kemp's Bay, on the western side of the mountain; and it appears to lie north-west and south-east, traversing the kloof from the Lion's Head, appearing abundantly in Table Bay.

The mountain is chiefly composed of a pale yellow silicious sandstone, of a fine granular kind. A rock of quartz and hornblende is very common about the kloof, and may be consider-

ed a sort of binary granite. The hornblende is found in large black masses; but the Table Mountain has been visited by many persons of eminence, and given rise to ingenious speculations. Thus Mr. Playfair, in the Edinburgh Philosophical Transactions for 1813, believes the sandstone of the Table has been a quiescent submarine deposit, which has been elevated to its present level by the granite in a state of fusion.

Mr. Clarke Abel, who visited the Cape, was likewise struck with Table Mountain, and says that Professor Playfair's theory is incontestable. He argues that the lower rocks, being of igneous origin, shoot up in vertical veins into the superincumbent horizontal strata of the sandstone, which is of water formation. I see no reason for any such apparently recondite deductions from vague hypotheses. We know nothing about the matter.

The vegetation of the Cape has been so much lauded, and its beauties have been represented as so far superior to that of other countries, that it would seem venturesome to dissent from the general opinion. For my part, I cannot see this superiority; on the contrary, instead of it I found

a deficiency of trees, and a stunted vegetation in general. Where is the fine hawthorn hedge, with its cheerful companion the eglantine? Where blooms the cowslip and the daisy, the violet and the primrose, and where the variegated flowers of the grove and lawn? Are the heaths and ixias, and even the geraniums, to be compared with these? They flourish in their beauty during the short interval of spring, and are quickly burnt up by the sun as the summer approaches; but in the midst of all their splendour they are scentless. It is said that the Cape possesses three thousand indigenous species, four hundred of which are bulbous, and there are few useful purposes for which they are not available. Neither dyes nor drugs are to be obtained from them, excepting aloes; and even the wood for the wine-casks is imported.

A remarkable feature in the vegetation of the sandy plains is the peculiar structure of the leaves and in many instances of the flowers, of the various plants that are found there. A diminutive and arid foliage is found in some of these plants, and others have a succulent leaf containing cells of water. The woolly drabs or cloth-like leaves of the *gnaphaliums* are well

adapted to catch the dews of night, and prevent the effects of heat and evaporation in the daytime; but the leaves of the *bapleurum giganteum* are still more remarkable. The epidermis is green-coloured and woody, falling off in scales when the leaf dies, and leaving the cellular mass, which resembles felt or soft chamois leather. It is double, resembling the finger of a glove, and presents a most remarkable deviation from the common structure of leaves. It is used as tinder, for which purpose it needs no preparation.

The Cape is a well-stored menagerie, abounding with wild and ferocious animals. The monarch of the desert, the lion, makes the plains resound with his deep, tremulous, and awful roar, and springs from his lair on the unwary traveller. Tigers and hyænas prowl about; and the wolf, or *hyæna villosa*, makes sad havoc in the farms. This creature lurks about the kraal, and warns the inmates of the farm that he is near by his hideous howl. He is a timid animal, will run away from a boy who may have the courage to face him, and has an ill-looking grinning countenance. The elephant is found in the woods of an enormous size.

The hide of the rhinoceros supplies whips: the elegant and extraordinary giraffe is found in some parts of the colony, and there are many other species of the antelope tribe.

The birds of the Cape are a numerous assemblage. The most beautiful is the golden cuckoo, or *cuculus auratus*; his note is not so loud as ours. The jay is a fine bird. The black eagle of the Table Mountain, vultures, griffons, hawks, bustards, owls, and cranes, all afford beautiful and interesting specimens. The little sugar-birds are extremely elegant, and are allied to the humming-birds. The rose-coloured flamingoes are found in large flocks at Saldanha Bay, where it is curious to see them turning their heads topsy-turvy in the act of searching for food in the mud.

The large white pelican parades about the beach at Cape Town, generally near the fish stalls. Frequently he takes his flight over the bay and fishes for himself. Sometimes he is fed with corn, which however is not exactly to his taste, and he has recourse to a capital artifice to get what he likes better than such hard stuff. He carefully gathers up all the corn that is given him and carries it off in his pouch,

till he meets with a brood of chickens in his walks. On seeing them, he most sagaciously scatters the corn about, and by pecking it up in his clumsy fashion here and there, attracts the attention of the unwary chicks. These immediately hasten to join him in his meal, being quite ready for such good fare. When he sees them all busily employed in picking it up, he watches his opportunity and snaps up the first he can get hold of. Away he flies with the poor chick to make a meal of him instead of the corn.

The secretary-bird is common at the Cape, a fine stately creature with a radiated tuft or top-knot, ready to devour all kinds of snakes and some of the smaller land-tortoises. The ostrich stalks over the sandy plains, and if devoid of elegance, it is not from a want of fine feathers. The male birds only are provided with those plumes which are so much valued, and matchless groups of females range about the country in forlorn widowhood. The ostrich is polygamous, a rare instance among birds in a state of nature. The female lays seventeen or eighteen eggs in one nest, and two or three are stated to be always found on the outside, as a provision

for her young. An ostrich's egg will weigh about three pounds, its contents will fill a quart basin, and are reckoned equal to twenty-four hen's eggs. They make excellent puddings, and are by no means strong.

The strike or butcher-bird is something smaller than a thrush, having a strong pointed bill, with a white band about his neck. He is the general executioner of snakes, and spikes them most adroitly on a thorn, picking their bones at his leisure and allowing their skin to hang in effigy, as a trophy of retributive justice inflicted on the venomous race. Snakes in their turn make war on the birds in general that they can manage; and these, aware of their enemy, build their nests with singular skill to avoid them.

The little titmouse suspends her nest from the extremity of some slender twig of a lofty bush. The texture of the nest is so beautiful as to have been supposed by some to be made of spiders' webs. It appears however to be formed of the fibres of some of the leaves we have noticed, carefully worked into a thick mesh or felt, as soft as down and as warm as flannel. The opening into the nest is extremely

difficult of access, being small; and in a little pouch on the outside of it sits the male to cheer and guard with assiduity his patient partner, at once an example of conjugal love, instinctive wisdom, and foresight.

The finch builds her dome-shaped nest with only a very small aperture beneath it, in such a position that the snake has the greatest difficulty in finding it. These birds congregate in flocks to build their nests. Another finch has a perfectly pensile stocking-nest, tied only by a straw or two to some small branch of a tree. The nest of this bird is a curious webbed-like structure, and seems to evince still more alarm than the others from the predatory attacks of snakes. The cornfields are not without their tenants, and here again the greatest ingenuity is shown to avoid the snakes. The nests are not placed on the ground, but cunningly built between two or three straws which the bird manages to bend and twist together in a very ingenious manner with grass. Others again are built in prickly shrubs, up which the snakes cannot ascend.

The nest of the ostrich is the only one which is placed on the ground, but her eggs are so

strong in the shell as to resist the power of the snake to break them. Most snakes are very fond of eggs; and one species in particular, which lives principally on them, is not provided with teeth. Such are the contrivances for offence and defence which Nature has provided her creatures—so much solicitude for preservation and so many destructive agents; but by this wise dispensation of the Almighty is the balance of power—that harmony of the universe, preserved.

The Cape would not be inappropriately called the land of snakes and lizards. The puff, one of the viper tribe, is extremely dangerous; its bite killing a person in half an hour. This creature is said to bring forth thirty or forty young at a time. The cobra de capello, common at the Cape, is somewhat longer in killing, but the poison is equally fatal. Some of the colubres are viviparous, and some oviparous; and it is curious to see the little snakes thrusting their heads out of membranous shells. The poison of the cobra is swallowed by the Hottentots; in fact they suck the bag containing it in the most venomous snakes, in order, as they imagine, to inure them to its effect, and to ren-

der them proof against the poison in case of their being bitten. The effect produced on them appears to be a train of symptoms like intoxication, and nothing more; but they consider it as rendering them invulnerable. It seems odd, and almost impossible, that the stomach should receive with impunity a liquid one single drop of which by inoculation would assuredly prove fatal; but we know that the stomach possesses amazing controlling powers. It is a question yet whether the butcher-birds and the secretary-birds eat the whole snake, or whether they reject the head and poison-bag. For my part, I believe that they swallow it as the Hottentots do. It would also be an interesting experiment to ascertain whether the secretary-bird is proof against poison by inoculation, for we are not in possession of any facts on this curious subject. It is certain that some of the poison-doctors among these Hottentots, or bushmen as they are termed, do swallow the venomous matter to a considerable extent; it is known that poisonous snakes preserved in spirits impart deleterious qualities to the liquor, and that a wound inoculated with it has produced violent constitutional derangement.

The cobra de capello is carried about in the hat without injuring the person to whom he is accustomed. Sometimes his owner will irritate the creature, and after having allowed him to bite a red rag repeatedly, so as to exhaust the poison from his fangs, will then suffer himself to be bitten, and is not affected by it. Some of the tree-snakes are sixteen feet in length. Their method of getting at birds' nests is very remarkable. It has been observed that the nests are generally placed on some very slender twigs and at their extremity. The snake ascends another tree which overhangs the nest, and suspending itself by the tail gradually lets himself down into it. He is no sooner there than he immediately makes away with his lawful prey, the eggs. The farmers accuse the snakes of sucking the cows' teats for the milk, of which they are well known to be very fond; I will not however vouch for this, and only give the assertion as I received it. The toads of the Cape are hideous creatures, having a milky acrid juice exuding from their bodies. This, if imprudently handled, is said to produce violent inflammation, and even death, according to the accounts of the country people. Various kinds

of lizards abound at the Cape, and among them the chameleon. I kept some of the latter in my drawers on board the Chanticleer for a long time, and had a small branch of a tree for them. It is a small lizard from four to five inches in length, being feeble and totally deficient of that extraordinary agility which belongs to the lizard tribe. It is slender and lank, with a loose skin, which its body seemed always unable to fill. It could neither run nor leap, was very timorous and patient, and when touched, felt as cold as marble. In fact the chameleon on dissection appeared no more than an inflated skeleton covered with a mere shred of skin. The colour of its skin varies according to the place it inhabits, but is mostly of a light brown. The chameleon is reputed to be viviparous, and is said to bring forth twenty or thirty young at a birth: the bough which it inhabits displaying the young perched in different parts of it.

This helpless, timid creature exhibits in a remarkable degree the wise dispensations of Providence in obtaining his food, which consists of flies and insects. Slow-paced and quiet as he is, their liveliness and incessant motion would

place them beyond his reach most effectually if he had not resort to stratagem. In order to take his prey at any time, the chameleon assumes the exact colour of any body on which he may be resting. He neither moves nor seems to breathe, but remains fixed and apparently inanimate in the position which he has chosen for several days together. But the soul of the chameleon all this time is in his eye, a minute speck, concealed by the eyelid closed over it. Although apparently in a quiescent state, his eye is watching the motion of a fly, while its own motion, by the lid being closed over it, is concealed from the unwary insect. As soon as the fly is within the reach of his tongue, out it darts with the swiftness of lightning, and by its peculiar structure is certain of seizing it.

To digest the morsel of a fly requires no great intricacy of organs. We are all interested about the chameleon in our early days by the story of his change of colour and living on air. In many of them the play of colours is very trifling, but in others it is extremely brilliant and curious; yet I expected to have found more, so much does imagination picture to itself from overrated description.

A great variety of fish frequent the shores of the Cape, and in consequence whole fleets of fishing-boats go out from Cape Town every day when the weather will permit. They all return by two o'clock in the afternoon, the established hour for the market. This regulation affords the people the means of having their fish in the greatest perfection, and is therefore advantageous both to the buyer and seller. Simon's Bay is supposed to have better fish than Table Bay; but I believe that each place has its own peculiar kinds. The fishermen of Cape Town adopt a curious practice which I have not seen used anywhere else. They invariably smear their nets with blood, which is allowed to dry on them, and they consider that this entices the fish and thereby ensures them a better haul. When a cod-fish is drawn up from thirty or forty fathoms he is frequently blown, a term which signifies that a portion of the bladder protrudes from the mouth. This is the effect of diminished pressure, whereby the air in the bladder expands and forces it out at the mouth, and shows the depth that the fish generally inhabits. In the case of the cod, even if he gets off the hook in this condition, he can-

not go down, because the expanded bladder floats him.

There are four species of sun-fish at the Cape. On the 14th of November a large one was taken by the boats of the Chanticleer in Table Bay, and hauled on shore opposite to the Amsterdam battery. The length of it was seven feet five inches, its breadth three feet nine inches, and it was estimated to weigh about eight hundredweight. This fish is slow in its movements, arising from the small size of its fins, and it was therefore easily captured; it seems to depend on a cartilaginous coat as its only means of defence. It is evidently not a voracious fish, and was infested by numbers of crustaceous ticks, adhering to its skin in clusters like barnacles. At night the sun-fish is particularly luminous in the water.

The shells at the Cape are neither numerous nor handsome about Table Bay, and what are found for the most part are converted into lime for building. The caput Medusæ is sometimes taken by the fishermen in the bay, and fetches a price of ten guineas. The water of Table Bay exhibits a very different appearance according to the quarter from whence the wind

blows. With a north-west wind the water is dirty red and turbid, as if mingled with a small quantity of blood. After a south-east wind, on the contrary, the water is so beautifully pellucid, that the anchor by which a vessel is riding in ten fathoms may be distinctly seen from on board.

Table Bay is not frequented by his Majesty's ships, as it is much exposed to the wind and sea from the north and north-west during the winter season, when the wind prevails from those quarters. The heavy swell which sets into the bay with these winds is likely to snap the chain-cable; and vessels are therefore recommended to have a great scope of cable out, such as two chains on end or a chain and a whole hempen one. The jetty or landing-place at the south-east end of the bay is inconvenient and bad. It is indeed an unworthy structure for the town, which deserves a better and more commodious one.

Robben Island, which lies at the mouth of Table Bay, is low and about seven miles in circumference. It is about nine miles from Cape Town, and is used as a place of transportation for convicts. The clay slate, or compact crys-

talline stone of Robben Island, is valued for building, and the convicts are employed in quarrying it. The island is well supplied with water; and it abounds with quails, rabbits, penguins and their eggs, seals and sea-fowls. Lizards, chameleons, and scorpions are likewise found there in abundance; and sharks are repeatedly thrown by the sea high on its shores. The best cauliflowers of the country are said to be produced on Robben Island.

Simon's Town, the government naval dépôt of the Cape, is a small village about twenty-three miles from Cape Town by land. Part of the road between the two towns is tolerably good; but it is dangerous to pass over other parts of it during winter or in wet weather, from the occasional occurrence of quicksands. The dockyard at Simon's Town is neat and compact, and at the small victualling store belonging to it supplies of various descriptions may be obtained. A few respectable houses and a series of grog-shops, besides a few stores, compose the village, which is looked on as an insignificant place, and owing its support entirely to the naval establishment. Besides this, everything is dear there, and indifferent in

quality. The naval hospital is spoken of as being a very comfortable receptacle for the sick ; and the dockyard chapel is regularly attended, the duty being performed by the garrison chaplain. The society of Simon's Town is of course very limited : the place boasts of no public amusements ; neither is the adjacent country by any means attractive. Simon's Bay, however, is considered a safe harbour in all seasons of the year, and ships can beat in or out of it with any wind.

CHAPTER XV.

Seasons and Climate of the Cape.—Barometrical pressure at the Cape and at Cape Horn compared.—Remarks on the Barometer.—Mirage.—Dew.—The Table-cloth.—Opinions of this phenomenon.—Meteors.—Temperature.—Emigrants.—Opinions of the Country.

At the Cape, the year is divided by two seasons, viz. summer and winter; the mean temperature of the whole year being 67° . In November the summer commences, and continues through December, January, February, and March; April being a kind of intermediate unsettled month. In May the winter commences, and continues till September; October being a preparatory month for the summer. It is in October that the flowers make their appearance, in promise of the fruits of summer.

The summer months are hot, fine, and dry, the thermometer ranging from 66° to 92° in the shade, and the average being 76° . Although the heat is considerable in summer, it is mitiga-

ted by a fine refreshing breeze from the south-east, the prevailing wind of summer along the southern and south-eastern shores of Africa; but on the western shores, the south and south-western wind prevails. The nights in the summer season are delightfully cool and refreshing.

The winter season may be compared to the cold and mild summer of England, and is the pleasantest time of the year, the temperature being agreeable and averaging about 60° as the mean of the season. During this period, the winds blow from west and north-west, and are attended with more or less rain. The mean temperature of the coldest month of the year is 56° , and that of the hottest 79° . The barometer ranges throughout the year from 29.7, the minimum, to 30.6, the maximum; the mean state being 30.23 inches. The barometer has a higher range in the winter than in the summer.

And here it may be well to revert, while the facts are before us, to the remarkable difference between the height of the barometer at this place and at Cape Horn, the two southern extremes of the great continents of Africa and America. The barometer at Cape Horn, Sta-

ten Island, and New South Shetland, scarcely ever reaches 30 inches, and the mean of the year is 29·3 or 29·4 inches; so that the mean state of the barometer at Cape Horn is absolutely under its lowest state at the Cape of Good Hope. And the average difference between the atmospheric pressure of Cape Horn and that of the Cape of Good Hope is nearly one inch of the barometer, or one-thirtieth part of the pressure of the whole atmosphere. But the same thing precisely occurs within a much smaller space than that between the two capes; for at Valparaiso on the coast of Chili the barometer stands equally as high as at the Cape of Good Hope; so that within a space of a thousand miles there is a *permanent* difference of one inch in the pressure of the atmosphere. And if we suppose, that at any time the barometer is high at one place and low at the other, we shall have at Cape Horn the barometer at 28·3, while at Valparaiso or the Cape it will be at 30·6, being an occasional (nay frequent) difference of more than two inches. Now, if we consider these changes to take place principally in the lower strata of the atmosphere, which in fact must be the case, and that they range within

the limits of five or six miles altitude, how great must be the difference of the weights and pressure of the reciprocal columns! It is not surprising then that there should be continual gales endeavouring to restore the equilibrium.

From the foregoing statements it may be safely inferred that "the mean height of the barometer at the level of the sea being the same in every part of the globe," is by no means correct; but, on the contrary, that every place has its own peculiar height of the barometer; and to this permanent variation, a circumstance not heretofore recognised, may be attributed the perpetual interchange and motions of the atmosphere.

Every place has no doubt its own specific pressure and appropriate temperature, as well as that of magnetic and electric action. The laws which regulate the barometer are not yet thoroughly understood, nor does our present knowledge of hydrostatics solve the whole phenomena. Meteorology is a science yet in its infancy, notwithstanding the vast mass of tables already supplied to it; and we want some master-mind to unravel the mysteries of the subject, and to propound the laws and principles

of the science. It must be undertaken in a general way, and not with mere local observations. Are there not zones of atmospheric pressure as well as of temperature? The mean pressure within the tropics is 30° with a very small fluctuation, a range of not more than $0\cdot5$ inch during the whole year; while that of the extra-tropical to the latitude of 40° perhaps have the highest mean barometer $30\cdot2$ or $30\cdot3$ inches, and a greater range of fluctuations, amounting to an inch, or an inch and a half. Again, in the cooler latitudes from 40° to 60° and upwards, there is an unequal and fluctuating range, the mean pressure being below 30° and about $29\cdot8$ inches, with a wide range from $28\cdot1$ to $30\cdot8$, being two and a half inches.

Of the polar climes we have not sufficient evidence to state anything with precision. It appears then that the extra-tropical or middle zone is the zone of high pressure, the inter-tropical of equal pressure, and that the cooler climes have the greatest change of pressure, combining both the highest and the lowest, but with the lowest mean pressure. Before predicting from the barometer, it is necessary to know its

local mean and action. The foregoing conclusions are the result of observations at many places in each hemisphere.

Thunder and lightning is not of common occurrence at the Cape. The waving tremulous motion of the atmosphere over the heated plains and the beaches is frequently seen in warm weather. The looming or horizontal refraction of the land is deemed the best prognostication of rain at the Cape; and when distant land appears near to the observer, a northerly wind is expected.

The mirage, or reflected pictures in the atmosphere, a singular phenomenon, is of frequent occurrence at the Cape. Robben Island, and the shipping in the bay, were seen in the sky several times by us during our stay here in the Chanticleer, forming a picture of the inverted images depicted in the vapour of the atmosphere. I remember once that a considerable part of the bay and the shore formed a beautiful aerial picture which lasted about a quarter of an hour; so that, after all, castles in the air may be founded in reality.

Dew does not always fall equally on clear nights. The heaviest dews are in the winter

season, and during a prevalence of north-west winds. The winds are often entirely local: thus a strong south-east wind may blow for a day or two at Simon's Town, and a light north-west breeze at the same time in Table Bay. It was no unusual occurrence for a fine breeze from the south-east to be blowing for many hours in the north-east part of the bay, and sometimes over the whole bay, when ships would be coming round the point with the wind from the westward, to be taken aback with that from the south-east in the bay. Ships generally, having left the bay with the south-east wind, lose it when a few miles beyond Robben Island.

During the summer season at the Cape, we have stated that the south-east is the prevalent wind. It is in fact analogous, in some degree, to the trade winds and sea-breezes of the tropics; but we must be careful to confine it to the southern and south-eastern coasts,—it then becomes a true sea-breeze, or a rush of cool air upon the heated plains. But there is a remarkable circumstance connected with the south-east wind at Cape Town, viz. the dense mantle of vapour which rests upon Table Mountain, and rushes over its precipitous sides like a cataract

of foam or vapour. This peculiar appearance is called by the inhabitants the *Table-cloth*.

When a south-east wind, passing over the southern shores of the Cape, prevails sufficiently to surmount the Table Mountain, the first notice of the fact is a little mist floating as a cloud on a part of it about ten or eleven o'clock in the forenoon. By noon the mountain becomes fringed with dew; and half an hour after, a general obscuration takes place by the mist. In another half hour the little cleft between the Devil's Berg and the Table Mountain pours over the cloudy vapour; and at two the Devil's Berg is capped by the cloud. The table-cloth is now completely spread: the south-east wind, the progress of which had been thus arrested, now forces its way onwards and rushes down the mountain into Table Bay with the utmost violence, producing loud and terrific noises in its course, and accompanied by a most curious exhibition; while the Table Mountain remains covered with the dense cloud, fragments of the vapour are torn from it by the force of the wind, and are hurried about the sides of the mountain, assuming a variety of fantastic shapes, and playing about the precipice

according to the direction of the different currents of wind. This phenomenon lasts till about five in the afternoon, when a little clearing, which takes place on the western edge of the mountain, announces that the table-cloth is about to be folded up. By six or seven the clearance has considerably advanced; and by eight or nine every vestige of it is gone, and nothing is seen about the mountain but an ethereal sky and the twinkling stars.

Such is the curious phenomenon of the table-cloth at the Cape of Good Hope with the south-east wind; and even while this lasts throughout the night, it will disappear in the same manner. When this is the case, in the early part of the morning a little white cloud may be seen suspended like a canopy over the Table Mountain; at ten a little vapour begins to curl and play about the mountain, and precisely the same phenomenon takes place as before. We are here supposing that the south-east wind blows for two or three days at a time. At other times, when it is only of short duration, and in a hot clear day, the first symptom of this breeze is the vapour resting in little parcels on the mountain; and as these increase, so does the

wind come on. But it is not till the mountain is completely covered that it forces its way with such violence down the precipice. By the evening, about nine, the table-cloth is gone, and with it the wind, and a beautiful calm and serene night ensues.

I have been rather particular in delineating the progress of this phenomenon, and have carefully noted the times when the foregoing changes take place, for observation is the best mode of rectifying opinions ; and the true solution of the whole appearance has not yet been given, that I am aware of, with the whole of the circumstances attending it. At the base of the mountain on the south-east side there is little or no wind ; on the summit of the mountain, during the strongest period of the south-east wind, there is only a light air, accompanied by a raw cold mist and drizzling rain. Lower down in the cleft a brisker current of air is felt ; lower still, near the limits of the mist, the strength of the wind is greater ; and below this again, where there is a clear blue sky over-head, the wind rushes down with great impetuosity, occasioning a loud howling noise. All this

time a violent gale is passing over the heated plain of Cape Town.

During the whole period of the south-east wind the sky is a beautiful Italian blue ; not a vestige of a cloud is to be seen, excepting those resting on the mountains. The line of demarcation between the vapour rolling over the sides of the mountain and the clear atmosphere, is as distinct as if a huge table-cloth were thrown over its top, and hung down its sides. At the time of the general obscuration of the Table Mountain, the Devil's Berg with the prominent peak to the westward called the Lion's Head is perfectly clear, and during the whole continuance of the south-east wind has not the least vapour about it. Again, on the contrary, when the light north-west winds prevail, the first appearance of vapour is frequently on the Lion's Head. This denotes a moist atmosphere, and is attended by a high hygrometer. Many, and indeed most theories of the table-cloth, have been that the south-east wind passing over the ocean is loaded with moisture, and that the coldness of the Table Mountain condenses it. Now there certainly never was anything more

at variance with the truth than this: the fact is, that the south-east wind is generally of a very dry and evaporative nature; so dry is it that in the country the wheels of the carriages and waggons split, panels crack and fall out, &c. Lieut. Kendall was stationed on the Lion's Rump, the height of which is eleven hundred feet, and provided with the best meteorological instruments; he remained there a week during strong south-east winds. While the table-cloth was on the mountain, the temperature of the air on the Lion's Rump was 82° Fahrenheit, and Daniell's hygrometer showed 48° ; a remarkable dry state of the atmosphere. This officer remained a week on the Lion's Rump, and his observations during the south-east wind gave from twenty-five to thirty thermometric degrees of dryness by Daniell's instrument.

Such a result completely annuls the hypothesis of the air being saturated with moisture even at the height of one thousand feet. There is no indication of moisture in the atmosphere. Besides, why should the mountain become clear at night, if it were from the condensation by cold? We have seen that in a north-west wind, when the air is moist and rain falls, we have

vapour and cloud upon the Lion's Head and hanging lazily about the side of Table Mountain. If it were from cold only that the condensation takes place in the heat of the day, why should the same condensation take place on the Lion's Head, since by its smaller mass and insulated nature it ought to be proportionably less than the broad expanded mass of the table land? For my own part, I cannot account for it; nor can I accede to any explanation which I have seen of it. It is a superb phenomenon, and on a more extended scale here perhaps than anywhere else. I cannot help thinking that the impetus of the south-east wind partly proceeds from its rarefaction by heat, thus enlarging its volume and setting its particles in motion.

Although the south-east wind is troublesome and annoying by its force, and the clouds of sand which it drives before it, yet it cools and refreshes the air, and sweeps away all noxious vapours and putrid emanations; and it moreover supplies Cape Town with abundance of pure water, without the inconvenience of rains, through the dryest summer when not a drop falls. The mantle of vapour which covers the Table Mountain deposits such a profusion of

water as far surpasses the produce of occasional showers.

Several shocks of earthquakes are on record in the colony, some of them being attended by meteors, which often are seen here of a splendid description. On Monday the 19th of October 1829, I witnessed one about ten in the evening, passing from the south-east towards the north-west. It was so extremely brilliant that an object might be distinctly seen on the ground, and the glare of it quite lighted up the town as it passed over. Many of the inhabitants, who were in bed, imagined that it was lightning. Soon after it passed over the town towards the sea, a loud explosion was heard in the offing, as if a great gun had been fired, and several people rode out to Green Point to ascertain whether it was a signal-gun from a ship in distress. In fact, every one was enquiring the reason of a gun being fired. It was a complete globe of fire, and in its flight appeared to have no tail. It occasioned some alarm, and was thought to denote the approach of an earthquake, but none took place.

Lieut. Kendall, by the observations he made on the Lion's Rump, found that water boiled

there at the temperature of 208° , which does not accord with Dr. Wollaston's statement of water boiling at 1° of lower temperature for every five hundred and twenty feet of elevation. The Lion's Rump is only eleven hundred feet high. In November, the first month of summer, the temperature of the spring was 63° . The observations made in the Chanticleer at the Cape give the following mean results of temperature :

July	Air, 58 degrees.	Sea, 57 degrees.
Aug.	— 54 ditto.	— 54 ditto.
Sept.	— 60 ditto.	— 56 ditto.
Oct.	— 59 ditto.	— 55 ditto.
Nov.	— 62 ditto.	— 57 ditto.
Dec.	— 68 ditto.	— 58 ditto.

It would therefore appear, on comparing the results of the Cape observations with those of Madeira, that the climate of the Cape, although of a higher latitude, is 2° warmer for the mean temperature of the year. This may probably arise from the insulated condition of Madeira. The southern hemisphere is not colder than the northern at this parallel; — whereabouts then does it begin? Owing to the great disparity of temperature between the sea and the atmo-

sphere, the bathing at the Cape is cold and chilly ; for in the summer there is a wide difference between these temperatures, but in winter it is not so great. While the air over the sea is not at a higher temperature than 60° , we readily discern the cause of the south-east sea-breeze rushing on to the heated land of 80° or 90° . The absence of the land-wind may be attributed to the same cause ; the air at night is not cooled down below the temperature of the water. Within the tropics the water and the air are nearly of the same temperature. We have shown in contrasting Madeira with the Cape, that the former is 2° cooler ! but the temperature of the sea at Madeira is 7° or 8° above, that of the sea at the Cape, a circumstance which is not without an application in the doctrines of the winds of the two hemispheres.

The climate of the Cape is probably as healthy as any in the world. I know of no peculiar diseases belonging to it, nor did I hear of any. Coughs are troublesome in the spring, as they are everywhere else, and gout is common among the farmers, a circumstance which I think has been accounted for. This scanty catalogue of maladies is all that I can

assign to the Cape ; and the people in general appear ruddy and healthy. I was told that there is a leper hospital at Caledon, from which I conclude that leprosy may occur here.

The stay of the Chanticleer at the Cape was long, partly for the purposes of making pendulum experiments, for refitting, and partly to avoid the wet and unhealthy season of the tropics. An extensive series of pendulum experiments were made as well as magnetic observations, which, with those for latitude and longitude, and the meteorological register, completed our researches at the Cape. Although our stay was long, nowhere could we have tarried more agreeably, and nowhere could we have been more kindly received or more hospitably entertained ; and the officers of the Chanticleer one and all strove to testify their estimation of this kindness on the part of the inhabitants. Although it has all now passed away, the impression of it will never be effaced. To the end of our voyage the remembrance of our friends at the Cape was ever uppermost, and, I will answer for it, was carried to their homes by the officers of the Chanticleer.

Emigration was rapidly going forward while

we were at the Cape. The supernumeraries of society ought to emigrate. Indigence and restlessness are the two great causes—the former may find a relief—the latter never. British subjects were daily arriving at the Cape, on their way to Swan River, like scions from the great mother of nations about to be transplanted to the wilderness of Australia, to make the desert bloom. Thus is England bereaved of her children, and, judging from what I saw in Table Bay, I would add often to their own tribulation. By some unaccountable management we have inverted our former course of policy, and convicts are retained at home as labourers, to the exclusion of others from the bread of industry ; thus we harbour a hornet's nest amongst ourselves, whose sting may afflict us, while the industrious bee is driven abroad to build his hive and gather his fruit in foreign climes.

Many and frequent are the unmerited eulogiums and aspersions that have been bestowed in nearly equal portions on Southern Africa ;—by some it has been represented as a paradise, and by others as a dreary waste—the truth lies between them. By one party it is stated to be a frightful desert, without shade or water, with-

out trees or groves, where there is a want of rain from the sky and of springs in the earth ; where protracted droughts of three years' continuance have been succeeded by torrents which have washed everything away before them ; where the rivers swell with such rapidity as to sweep away the lofty banks and then dry up, leaving not a vestige of their former course, but a deep ravine ; where the traveller in the desert cannot procure a drop of water to allay his thirst ; where the lion, the tiger, and the ravenous beasts of the forest roam at large over the arid plains, the equal resort of wild buffaloes and elephants ; where snakes, scorpions, and noxious reptiles and insects abound ; where troops of springboks devour the crops, and where swarms of locusts create a famine and pestilence in the land ; where wild dogs and wolves devour the flocks, and where the rust and red-robin annihilate the hopes of the farmers. Such a picture of evils would induce any one to pronounce that the Cape must be uninhabitable, and certainly never was intended by a Divine Providence to become the abode of man. But the truth, as I have observed, lies between these and the equally worked-up pic-

ture that has been made of it by its admirers when they have ended in calling it a paradise. The foregoing individually and separately are well known at the Cape, but not to that overwhelming extent as to interfere with the progress and happiness of the colony. There can be no doubt that two-thirds of its extensive land are composed of sterile mountains and dreary waste, where not a drop of water is to be found ; but, in its stead, much that has been mentioned. The country is without roads or navigable rivers ; and in a belt of sea-coast of six hundred miles, there is not a single valuable harbour. Saldanha Bay, the only one that has any pretensions to the name, is indeed spacious, and probably secure, but no fresh water has yet been found there ! Therefore, between the admirers of the Cape and those who despise it, a tolerably correct opinion may be formed of it by allowing for the prejudices of both.

The entire population of the Cape, when the Chanticleer was there, was about one hundred and thirty thousand—of white people fifty thousand, Hottentots thirty-two thousand, slaves thirty-two thousand, and free blacks four thousand. Notwithstanding all the evils before

enumerated as belonging to the Cape colony, I know of no place where a person in quest of a happy, quiet life can find it more readily than there: if a fine climate, with all the necessaries and luxuries of life at a reasonable rate and easy of acquisition may be considered as contributing to it, a life of quiet, comfortable competence is within the reach of most persons. Although the Cape colony may improve considerably, still I am inclined to believe that unless some new and unexpected sources are opened, it never will be a great or thriving nation. But, limited as its population is, and with such vast range of country, it is well able to support its present people and many thousands more in happiness and comfort, vieing in this particular with more splendid and older nations, and even far outstripping them. The Cape, after all, is a place after my own heart, and I wish it well with feelings of regard and attachment.

CHAPTER XVI.

Departure from the Cape.—Land and Sea-breezes.—Appearance of St. Helena.—Anchor off James Town.—Discovery of the Island, and its first possessors.—Relative heights of its peaks.—The Vale of Arno.—Some account of James Town.—Roads of the Island.—Halley Hill.—Diana's Peak.—Rating Chronometers.

ON Friday the 11th of December the Chanticleer was unmoored, and moved from her snug berth in the bay to one further out, in order that we might put to sea easily. On moving our chain-cables we found them covered with clusters of barnacles, which appear in some degree to produce a coralline structure. The buoys were also covered with them, the young being attached to the shells of the parents. The hempen cable was beset by them in every strand, the ulva being five or six inches long; and the difficulty of detaching them was far greater than in the iron cable, the weights of

the links in this breaking them very easily. This is no trifling advantage in hot climates, especially where the cables are much used. It is also an important consideration in regard to health, for the effluvia, or rather malaria, proceeding from a wet hempen cable must be pernicious.

On Sunday the 13th December we left the Cape under great excitement, produced by a fine fresh breeze from the south-east. We had no sooner cleared the bay than it fell calm. It was not long however before we got south-west and southerly winds, with which we rapidly shortened our distance from St. Helena. In lat. 23° S. under a vertical sun, the temperature throughout the day was 70° ; the thermometer exposed to the sun's rays on deck was 125° . In lat. 22° S. and long. 2° E. when about six hundred miles from the island, we found the south-east trade, which we did not lose during the remainder of the passage. The trade-wind in this part is from the south-east; but it will be seen that we were long in finding it, although at a season of the year when it might be expected to prevail as far south as lat. 28° , and this also in the hemisphere in which, according

to some writers, these winds have the greatest limits. But the circumstance of our not meeting the trade till we got into 22° S. appears to me to perfectly coincide with the principles assumed in accounting for land and sea breezes generally, viz. the tendency of cool air to rush in upon the heated air.

On the eastern side of the Cape of Good Hope we find the sea-breezes strong and blowing home upon the coasts; there the direction of the trade-wind coincides with that of the sea-breeze; they flow in unison and therefore swiftly. As we come on the southern line of the Cape, the tendency of the wind to blow from the south-east, or a cool quarter, still continues, as the causes remain the same; but as we round the Cape to the westward, the wind veers gradually to the southward and becomes south-west, because the south-east is no longer the cool quarter to that part of the coast, and to some distance off shore, perhaps a hundred miles or more, the south-east trade cannot blow, for the cool quarter is there the south-west. Hence the wind is light. But as we draw off shore, the south-east wind begins to prevail, and in the open ocean is uninterrupted. On the

western coast of Africa, generally within one or two hundred miles from the coast, the cool air from the ocean rushes in and counteracts the trade-wind: the western coasts of a continent therefore within the tropics have different winds from the eastern. The eastern coast of South America has the south-east winds blowing strong as far as Monte Video in the summer time; but the western coasts do not present the same extent of heated surface as those of Africa, on account of the chain of mountains which run parallel to the coast; and hence there are not westerly but southerly winds on that coast.

At daybreak on the 26th of December, St. Helena dawned like a speck on the bosom of the ocean in the western horizon; and, as we approached it with a light breeze, the island presented its rugged features under no propitious aspect. A gloomy haze hung over it, and there appeared nothing picturesque about it; like a huge castle of a dark forbidding appearance it rose from its base in the ocean's bed, almost vertical, devoid of the softening hue of vegetation, or even of bright sandy beaches to break the continuous mass of rock which pre-

sents itself to the distant voyager in all the rudeness of desolate grandeur and naked sterility. As a vessel passes round the eastern end of the island close beneath its mural cliffs of two thousand feet in height, the overhanging crags and stupendous ledges of rocks indented in many a fantastic manner into extensive recesses, which imagination pictures as the abodes of the giants of the storm, the tropic birds wheeling their mazy flight over the towering summits of the precipice, while the noise of the waves dashing with headlong fury against their base is re-echoed from a thousand caves—these form a scene which fills the mind with awe and veneration. It is a scene well worth beholding, and I shall never forget the impression it made on me. The island appears as if just launched from the conflict of the elements, in itself an impregnable fortress, so remote from the rest of the world and presenting so little temptation for the cupidity of man, that one would expect to find it the abode of peace. But not so, for here art vies with Nature's grandest efforts; fortresses with their turrets and cannon bristle on every point and pinnacle of rock. In fact, the position, the strength and

number of the fortified points, appear to denote that the ambition of its possessors would render it the citadel of the world. A more military station I know not, for it far surpasses Gibraltar; and one naturally asks himself, whence is all this solicitude, this unnecessary zeal, and overweening anxiety for its security?—whence the advantage of being safely caged in this island while the sovereignty of the sea confers on it immunity from danger? and when that is lost to us, of what importance or value could be such a rock as this? Such, however, were not the questions of those who planned the mighty works of St. Helena.

By noon we were about three miles from Sugar-loaf Point, and about an hour after we anchored off James Town in fourteen fathoms. Our arrival was marked by a salute of thirteen guns, which was returned by his Majesty's ship *Espoir*, Captain Greville, whom we found here, in order that the rates of our chronometers might not be affected by the concussion. On the following morning Captain Foster landed, for the purpose of finding a good position for making the pendulum experiments, which he shortly obtained in Lemon Valley.

St. Helena, it is well known, was discovered by Juan de Nova Castella, a Portuguese navigator, on the 21st of May 1502, and derived its name from this being St. Helena's day. It is related that after a victory gained by the celebrated Albuquerque near Goa, the Indian commander delivered up to him several deserters and renegades. The punishment inflicted on such persons in those barbarous days was that of cutting off their ears and noses, and accordingly these were so served. It is also stated that Fernando Lopez, one of these unfortunate Portuguese sufferers, rather than return to Europe with such marks of dishonour, preferred remaining an exile in St. Helena. In 1513 he obtained permission to land there with a few Negro slaves, and thus became probably the first settler on the island. In 1645 the Portuguese having abandoned it, the Dutch established a colony there. In 1651 it was deserted by the Dutch and taken possession of by the East India Company. In 1661 the Company were confirmed in their possession of it by a charter from King Charles the second, with powers of sovereignty and legislation. The island was taken by the Dutch in 1672, but was retaken

by Sir Richard Munden in 1673, and again granted to the Company by a new charter : since that period it has remained in their possession on a liberal and somewhat expensive scale.

St. Helena was once celebrated as being the only place at which the fleets of the East India Company were accustomed to stop on their way home from India and China, to obtain those refreshments so necessary on a long voyage. It is situated immediately in the track; and, in common with the works of a beneficent Creator, is well appropriated for the comforts of man. Its lofty hills are irrigated by clouds resting on their summits, and from their rocky beds rush streams of pure and delicious water.

St. Helena is ten and a half miles in length, in the direction east-north-east and west-south-west, and six miles and three quarters in breadth, having a circumference of twenty-eight or thirty miles. The surface of the island consists of about 30,300 acres. Of these, eight thousand acres are under cultivation, whereof 5880 are in the hands of private individuals; one half of this quantity being held as freehold, and the other half on lease of the East India Company.

The whole island may be regarded as an elevated rock rising abruptly from the sea, surrounded by deep water, with an iron-bound coast and bold shores on all sides. The mean elevation of the island is about 1,400 feet, and the heights of the principal eminences above the level of the sea are as follows :

Diana's Peak	2697 feet.
Cuckold's Point	2677
Halley's Mount	2460
Flagstaff Hill	2272
Sandy-bay Ridge	2200
Longwood	1730
Lot	1444
Lot's Wife	1423
Ladder Hill	600

Every one has been at St. Helena who has traversed the ocean ; but for the perusal of those who have not, I shall here transcribe a few of the notes which I made respecting it during our visit there in the Chanticleer.

The first thing that strikes the attention of a visiter at St. Helena is the magnificence of those rude and stupendous beds of rock which mark the character of the whole island. These are intersected by deep and terrific chasms,

towering precipices, and winding glens of a mysterious depth, which at once meet the eye and fill the mind with astonishment. There is besides a marked peculiarity in the formation of these rocky hills, and a corresponding one in the valleys by which they are divided. The former, rising in the shape of cones, are flattened at their summits, whereon are fine level and cultivated plains, the better portion of the island; the latter are mere narrow fissures of an awful depth, but so parched up that they are destitute of all symptoms of vegetation, and are the least useful part of the island. The ordinary course of Nature would therefore seem to be inverted at St. Helena; the hills bloom with verdure, while the valleys are parched and barren. This peculiarity however is accounted for by the summits of the hills being continually irrigated by the vapours of the clouds, while the valleys are for the most part exposed to the broiling heat of the sun, and destitute of water. There is however one exception to this anathema on the vales of St. Helena, and, perhaps, by way of making the most of it, a name has been selected for it which would compensate for the destitute condition of all the rest. This

cognomen is no other than the Vale of Arno ! But not having visited that celebrated one of all Italy's vales, I was unable to decide whether such a title really was bestowed on it from a rivalry of beauty, or from a comparison with the other less favoured vales of the island. The dark rocks which form the coast extend a short distance into the island, the interior of which generally consists of a brown clay and earth. The change from the former to the latter, which is covered with a perennial verdure, is grateful to the stranger ; instead of hurting his feet in passing over a wilderness of rocks, he finds himself amidst ferns and grass, where he may enjoy the refreshing coolness of the sea-breeze amidst the gorse and fir-trees.

The landing-place at James Town is very good. After passing a double row of peepel trees (the *ficus terebrata*) before the East India Company's store, the town is entered by an arched gateway, under a rampart or terrace, forming one side of a handsome parade about a hundred feet square. On the left side is the Government house, usually called the Castle ; and directly fronting the gateway is the church, a plain and humble structure. The principal

street commences near the gateway, and contains about forty houses of a clean and respectable appearance, being principally the residences of tradesmen. The most conspicuous buildings in it are the officers' mess-room and Mr. Solomon's hotel. This street in its course is divided into two, one on the east side, leading into the country, and the other leading up the valley, by which the size of the town is circumscribed. In this long street are the barracks, hospital, and the new garden. The town, which contains about two hundred houses, is flanked by batteries, and wears the appearance of a well-fortified town. Every height "bristles with cannon," and every nook is commanded by a battery: sentries are also posted in the avenues, who give or refuse admittance.

The general character of St. Helena is neither that of fertility nor beauty; the few verdant places in it derive a brighter appearance from the gloom and nakedness which prevail around them. The whole island consists of one parish, but contains two churches, one of which, as before observed, is in James Town, and the other in the country. James Town is the only one on the island, and is situated on its leeward or north-

west side in a narrow valley or ravine, about a thousand feet across in its widest part. The town extends up the valley from the sea to about a mile and a-half, at which distance the valley, gradually diminishing in breadth, terminates in an angle. In this ravine is placed James Town, the capital of St. Helena, faced by the sea and flanked on either side by rocky precipitous hills; that on the west being called Ladder Hill, and that on the east Keeper's Hill. The hills in many places completely overhang the houses, and stones being detached by accident frequently do mischief by rolling down on the roofs. A fortified line extends across the mouth of the ravine along the sea-shore. Ladder Hill on the west side of the town, which is six hundred feet high, has an inclined plane, which, by means of a thousand steps in it, affords a ready communication with the town; while the fort on the craggy and almost inaccessible eminence of Keeper's Hill on the east side is attained by means of a jackstay, or a sliding communication by ropes fixed to the fort and fastened to the beach below, and by this means things are transferred from one

place to the other. At the upper end of the ravine is a waterfall about a hundred feet high, the water of which is distributed over James Town, and is conveyed in leaden pipes to the wharf, where cocks and hoses are fitted for the purpose of supplying the shipping. The water is, of the purest quality and in great plenty. In a moderate season six hogsheads are yielded every minute, and the shipping may be supplied with three hundred tons every twenty-four hours.

James Town, small and confined within its narrow limits, presents nothing of importance; but the voyager will experience delight there in his temporary emancipation from the confinement of a ship. Small as it is, it possesses a good market-place, which is well attended every morning; and it boasts of a brewery, an unusual thing in so warm a climate. The shops of the town are moreover well stored with general merchandise of Europe, and some of the fancy articles of India and China are sold there at a very extravagant price. Mr. Solomon's establishment is too well known to require pointing out. His accommodations are of the first-rate order; and

what above all is most desirable in a warm climate, the attention to cleanliness in his house equals the most fastidious expectation.

The roads of St. Helena may be justly considered as an absolute conquest of the perseverance and energy of man over the obstacles of nature. They are all works of incredible labour, and are so many ledges on the faces of rocks that are almost perpendicular. A stranger, unaccustomed to the general character of the roads, is astonished at finding a safe and commodious carriage road along the face of a rock where he would suppose it impossible to pass. A wall is raised on one side to prevent the accident of falling over into the valley beneath, and on the other is the rock. After ascending a length of inclined plane, the principal road into the interior winds round the sides of the hill by which the visiter mounts to the upland plain of Longwood. This plain lies in the south-east part of the island, and comprises about fifteen hundred acres of land. It is occupied by a farm of the East India Company, but for the most part is uncultivated and sterile. The south-east wind sweeps over it, and the clouds and fogs which it brings obscure it

for days together. Longwood is girded on all sides by precipitous ravines, and one valley larger than the rest is called the Devil's Punch-bowl.

At Hutt's Gate, to the north-west of Longwood, commences the central mountain ridge of the island. Here the ascent is by a small rising piece of ground called Halley Hill, from having been the place selected by that celebrated Doctor for observing the transit of Venus. The walk along Diana's Ridge is much facilitated by a good pathway, the little rising hills on it having steps. Here the vegetation is abundant, and little copses embower the pathway here and there. A variety of ferns prevail here; but one particularly beautiful, called the tree-fern, emulates some of the palms in stature. In ascending Diana's Peak the view brightens and extends, and the fertile parts of the island are seen to the north-west, scooped out of the rocky mass which lies on the shelving sides. The view from Diana's Peak is so magnificent, that absorbed in contemplating its grandeur one forgets the small spot on which he stands: the wild irregularity of shelving rocks and acuminated peaks, the variously coloured strata

of earth, the bleak and barren ridges of rocks, the little verdant vales below, dotted here and there with cottages and farms, the rising knolls crowned with clusters of trees, and outside all these the sea bounded by an indistinct horizon, afford ample materials for a contemplative mind; and, while enjoying the view, the invalid from India's enervating clime may derive benefit from the refreshing breeze of the mountain. The converse of this, where stern sterility sits enthroned in all her harsher features, may be found in the descent of Break-neck Hill. There, beds of mountain rocks, heaped promiscuously on each other, repose in the primeval state of wild confusion. Few persons but geologists will ever venture down Break-neck Hill, and he must be one of the most persevering of mortals who makes good the descent.

On the ridge immediately above Ladder Hill is the Observatory, an establishment which bespeaks the liberality of the East India Company. It is under the superintendence of Captain Johnson of the St. Helena artillery, and in point of neatness and efficiency cannot be surpassed. The captains of vessels touching

at the island obtain the rates of the chronometers from this observatory, from noting the explosion of rockets fired at eight o'clock every evening. This is a most useful arrangement, and one of the least troublesome methods of rating a chronometer that can be adopted.

All that is required of the persons wishing to rate it is, to observe the time shown at the instant of the *explosion* of the rocket. The time at the observatory being also noted at the same instant, a comparison of the times gives the error of the chronometer, fast or slow, and a repetition of the same for a few evenings gives the rate of the chronometer gaining or losing. A method was adopted at the Cape by Mr. Fallows for the same object. His plan was that of suddenly obscuring a light by means of a shutter. The advantage of this method was, that the light being obscured at a time previously agreed on, was known at the moment of observation; whereas the time of the explosion of the rocket noted at the observatory could not be known immediately without sending for it. I cannot help thinking that the warning which

the gradual flight of a rocket gives to the observer is more favourable towards observing the moment it explodes, than the sudden disappearance of a light, for which he cannot be so well prepared.

CHAPTER XVII.

Napoleon's Grave.—Reflections.—Longwood.—Institutions at James Town.—Silk Establishment.—Potatoes.—Current prices.—The China fleet.—Absence of lawyers.—Humid climate.—Geology.—Cockroaches.—Sharks, their voraciousness.—Surfs.

THE principal objects of interest at St. Helena are Plantation-house, the residence of the governor ; Sandy Ridge ; and Napoleon's grave.

Of these, the latter is of course the most interesting to strangers ;—in fact, the first enquiry made by them is, “ How far is it to Napoleon's grave ? ” No sooner are they on shore than horses and vehicles of any kind are levied to convey them to the tomb of the exiled warrior. I fear that it would be tiresome to the reader to follow me there, for I had as much curiosity as every other person who visits the island : in fact, no one ever thinks of foregoing such gratification. The journey is short, and affords the

best opportunity of seeing the best scenery of the island, as it is in the direct route to Diana's Ridge, and to Longwood : therefore, if he should have seen all this, let him skip over a few of the following pages.

Napoleon's grave is about four miles from James Town. Having gained the heights above the town, the traveller sees hill and dale before him. He shortly betakes himself to a road or pathway on the left, and descends to a deep glen, where the world's once imperial lord is shrouded in peaceful solitude. The immediate spot where lie his remains is at once conspicuous from a number of weeping willows. On approaching it, the first thing that occurred to me was, that it was exactly such a place as I had pictured to my imagination as the grave of Abelard and Heloise. All concern for the celebrated lovers, however, was soon dispelled by the train of recollections which the scene brought to my mind.

Stranger, thy tread is on Empire's dust ;
An Earthquake's spoil lies sepulchred below !
Is the spot marked with no colossal bust ?
Nor trophied column for triumphal show ?
None !—but the moral thus is better told,
And better shows Ambition's littleness,—

for here in a little verdant dell, embosomed midst Nature's wildest scenes, lies all that remains of him that was once the proud arbiter of the fates of millions of his fellow-men. His grave is in the centre of a grass-plot seventy yards in circumference, enclosed by a neat circular fence; the common slabs from the kitchen hearth at Longwood form his grave-stones, and an iron palisade surrounds it. The weeping willows, reclining on the palisades, droop gracefully over the little enclosure; but the "forget-me-not" planted by Madame Bertrand has completely withered and disappeared—faithful emblem of all earthly things. A sentry-box is placed at the gate of the fence, near to which is a small cottage, the residence of the sergeant who has the charge of the grounds. The remains of the warrior are secure enough, for extraordinary precautions have been taken to make them so. His coffin is doubly cased, and fixed by iron fastenings to the brickwork of the vault which contains it. The willows are objects of peculiar regard; whether it may proceed from the character of them, or the facility with which they can be obtained, I cannot say, but they are taken away piecemeal by

every visiter, and are treasured like the relics of some holy shrine; and his eagerness to possess a slip of willow from the grave of Napoleon would long ago have annihilated them had not great pains been taken to preserve them, for few formerly ever left it without a sprig or cutting.

Near the base of the hill forming the side of the valley is a little fount of water; it is moss-grown and beset with brake and fern. The valley is adorned with wild flowers, among which the roses and geraniums bloom throughout the year, and mingle their delicious perfume. This was Napoleon's favourite resort; it was here that he used to delight in conversing with Madame Bertrand, or in listening to the gay prattle of her children, seated beneath the shade of these willows. The water of the brook was his favourite beverage; he used it daily, and when unwell was particularly solicitous to have it. He selected this place for his burying-ground should the British government not allow him to be conveyed to France for interment, and at his death the ground was purchased for £1200. A more retired or more tranquil spot could nowhere be found; and I

loved to frequent it for its rural beauty, and indulge in reverie on the worldly career of the hero who slept beneath its peaceful shades.

Daily pilgrimage is made to the tomb of Napoleon; and he who would point a moral on unrestrained ambition could have no better place for such a purpose than that which contains his ashes. The French still pay him the homage of their hearts, and, like the captives of Israel by the waters of Babylon, sit down and weep at his tomb. Though not a letter tells who sleeps below, his life is chronicled in history's page, and Fame has deeply engraven his name on her imperishable scroll. His simple grave transcends the lustre of eastern magnificence or the mummied treasures of pyramids. This island is his cemetery and a sepulchre of Nature's own, mocking the proudest monuments of art, or the trophied urns of power. Napoleon has here a catacomb to himself; the rocks are his sarcophagus, and their lofty peaks are the minarets of his mausoleum. The destroying hand of Time sweeps from their base the statues of men's hands; but the tomb of Napoleon will remain fixed in the ocean's bed to the end of time. He who of all earthly kings was once the mightiest, who

wrested the broken diadem from monarchs' brows, who broke the sceptre of a long line of ancestry, and grasping at the empire of the world itself, fell from the giddy height, became a suppliant for mercy, and died a dependent exile !

Many conflicting opinions have been entertained of Napoleon. By some he has been likened to an imperial Cæsar, by some to other monarchs of the earth : but he was like none of them ; all comparisons are inapplicable to Napoleon ; he was the very harlequin of Fortune, and she rang all the changes of her tricks upon him. By some he is esteemed as the genius of good, who burst asunder the chains of a degrading system, and gave eagle-wings to Liberty ; he was to these the day-spring of their aspiring hopes ; they saw in him the dawn of the perfection of reason and the felicity of man. Some vilify him as the very demon of evil, who converted Europe into a charnel-house, and deluged it with the blood of friends and foes ; who, as a reckless insatiate warrior, immolated his victims at the shrine of his ambition. Did Napoleon in his retirement ever cast a look on the past and feel the sickening pang of

self-humiliation? was it to give a lesson to the world on humility that he became the idol of millions? and was he thus withdrawn from the turmoils and strife of war, that by penitence and prayer he might wash his blood-stained vest?

Longwood, once the celebrated residence of the Emperor, was in a very dilapidated condition at the time of the Chanticleer's visit to St. Helena, and afforded in itself a good lesson of the mutability of all human affairs. The rooms which he occupied, which were once the state apartments of the fallen Emperor, were then filled by cowherds; and the whole suite of them were converted into barns and stables! Longwood, once so celebrated, bears no vestige of its former splendour, and has sunk into complete neglect. On the walls may be seen numerous hieroglyphics, the sentimental effusions of its quondam visitors. Whether they are intended to do honour to their authors, or to laud the memory of its former occupant, I know not; but sportive vanity may possibly derive some gratification in associating its name with his by scrawling a humble tribute of admiration on a wall. The new house at Long-

wood is a respectable but useless structure, and this is even hastening to decay. But the vale of Longwood affords some fishing and shooting to amateur sportsmen, and it boasts, besides, some show in agriculture.

Government-house at St. Helena is well known to its visitors on court days, and "evenings at home" are passed there by many in joyous hilarity. There are many good regulations observed at St. Helena; but there appears to be a tinge of jealousy, and desire for seclusion and secrecy, and some of the restrictions observed there belong to a Chinese rather than an English government. There are many of the former people on the island, from whom perhaps they may have been derived. The policy and regulations of the island are perhaps injudicious, in many particulars legislating too much in details. No map of the island is to be had, nor could I find that any one had ever been made, as if a knowledge of its interior afforded any additional security. Many noble measures have been adopted by the East India Company, and with an unbounded prodigality they have completed many noble undertakings. The observatory affords an instance of their at-

tention to astronomy, and other useful branches of knowledge are no less attended to by them. Through their patronage the museum has acquired a high character, agricultural pursuits have been carried to great perfection, plants and trees have been introduced from every clime, water has been husbanded and irrigation attempted on a grand scale, premiums have been awarded for every useful invention, Chinese labourers have been imported, saving banks for the poor, benevolent societies, and schools have been established, and funds for the relief of aged and infirm slaves have been raised; in short, every kind of institution has been made that good feeling could devise; and it is gratifying to the feelings of an Englishman to find not a single beggar in the streets.*

Among the various projects for the improvement of the island must be mentioned the introduction and cultivation of the mulberry-tree, and the establishment of a silk manufactory at Longwood. It has been reared at great expense, and the possibility of making silk has been proved beyond a doubt; but it seems

* Slavery is abolished in part—all children of slaves born after Christmas 1818 were declared free.

likely, from the high price demanded, that it will eventually be unsuccessful. I cannot for my own part see any good policy in forming such an establishment at a place where provisions are so enormously dear as at St. Helena, and this too with the products of India and China arriving daily. However laudable the motive of providing employment for the black population of the island, the judgment of the projectors was certainly not so commendable as their feelings. At present St. Helena neither yields sufficient food for its population, nor does the whole island produce a single article of commerce to exchange for foreign commodities of which it is in so much need. All the luxuries and most of the necessities of life are imported there : fuel is both scarce and dear, all coals being imported from England.

The potato is the principal article of agricultural produce, and those grown on the island are very good and much esteemed. In favourable seasons six thousand bushels are sold annually, which at their price of eight shillings per bushel is equivalent to £2400 sterling. There are three crops annually, but the joint produce of the whole is not more than *one* in England ;

and in scarce seasons they have literally been sold at the enormous price of thirty-five to forty shillings per bushel.

St. Helena is naturally a dear and extravagant place, and it was not without serious apprehensions that we thought of a long stay there in the Chanticleer; the consequence to us was, that we spent much less money than we did at the Cape, where everything is cheap. The reader may have premised, that we did without what we should otherwise have been induced to purchase, and the hospitality of Mr. Solomon prevented us from laying out our money, where we might otherwise have been obliged. I shall here enumerate a few of the prices at St. Helena as we found them, from which the reader may infer those of articles not mentioned, as they were in the same proportion. Beef, veal, or pork, 15*d.* per lb.; turkeys, each 1*l.*; milk, per bottle, 6*d.*; eggs, per dozen, 5*s.*; tea per lb. 2*s.*! moist sugar, 3*d.*; rice, very cheap; bread, extremely dear and very bad; horse-hire, 15*s.* per day; boat-hire to the shipping, 2*s.* 3*d.* The various coins of the world are current at St. Helena, at the following rate of exchange, dollar, 4*s.* 6*d.*; doubloons, £3. 10*s.* 6*d.*; Bengal

mohurs, £1. 11s. 6*d.*; Louis-d'ors and Napoleons, 16s 2*d.*;—sad association!—and both of the same value! French crowns, 4s. very low; Dutch guilders, 1s. 6*d.* English sovereigns generally command a premium there, from the circumstance of their being in demand for homeward-bound ships. A collector of coins might make a rich harvest at St. Helena. The expenses of the island are about £50,000 per annum, but this was undergoing reduction. The civil establishment consists of a governor and a council of two members. The port dues and regulations are objectionable; and the indiscreet firing at vessels is very reprehensible, as well as the marked preference to English vessels, however laudable the motive may be.

The gay time at St. Helena is the arrival of the China fleet with its golden fleece. All is then gaiety and excitement; and the evenings at home passed in domestic retirement give place to balls, at which many a tribute has been paid to the beauty of St. Helena by the unwary officers of this annual fleet conveying to England the treasures of the East. The means of conveying letters to England generally offer two or three times every week; but the very

reverse is the case with regard to obtaining letters from thence, and they are frequently, four or five months old.

Among the regulations at St. Helena is one which I had nearly omitted. It is this, no lawyers are allowed to reside on the island. How the squabbles and disagreements between parties are settled I cannot say, probably by the governor and his council; but certain it is, that the gentlemen of the long robe are excluded from the island. It is rather a strange regulation, but another still more so is, that no newspaper is allowed to be printed on the island! Scandal however needs not the aid of the press to give it wings, at least not at St. Helena; and probably if a paper were established there, it might serve as a safety-valve to let off the squibs on society: but, without one, the reports and "*on dits*" of the day gain a greater degree of mystery, and of course don't lose any of their importance or magnitude by being transmitted from one mouth to another. The attacks on society therefore at St. Helena are individually and not generally directed, and hence the feuds and petty jealousies which create divisions among too many families. The natives are

happy in the midst of all, and appear to be perfectly contented with their condition. One thing in the printing way is done at St. Helena, and that is an almanac every year.

The climate of the island, considering that the sun is vertical there twice in the year, has a peculiar felicity of temperature with mild and serene weather. The hills and upper lands are frequently enveloped in fogs and mists, and even the lower parts of the island are shaded and screened by the passage of light clouds over the sun, whereby the effect of his rays is considerably mitigated. Frequently a light canopy of clouds obscures the sun for several successive days, and the fine breeze which then prevails produces a delightful tropical temperature. Shade is always to be found at St. Helena, for the deep gullies of the island are more or less protected from the sun's rays by the high hills which surround them. These circumstances affect the climate of James Town, but in the hills a very different state of temperature is found. A small drizzling rain or drifting fog, prevails more or less every day, and the trees drop perpetual moisture. It was this place that furnished Dr. Halley, in 1676, with the theory

of springs and rivers. The circumstances were so forcibly impressed on his mind by the phenomenon he witnessed here, that he could not fail to discern the cause, which he found had the same effect in other countries. There have been seasons when this island has suffered most severely from drought, which has killed the cattle and withered the crops. In fact, so solicitous are they at St. Helena for the preservation of water, that all persons are interdicted from cutting the trees down by a very severe penalty. Much more rain, as is the case everywhere else, falls on the high lands than on the lower; and it is thought that the trees on the hills have considerable influence in attracting moisture. There is no doubt, that the leaves of trees present a surface favourable for the deposition of moisture similar to the blades of grass. A Mr. Ray, in the month of December 1691, observed during a mist, that the naked branches and boughs of certain trees condensed the moisture so fast, that in twenty-four hours a hogshead of water might have been collected from its drippings. Every one has noticed the dripping of trees in foggy weather. A woody country is therefore likely to be wet, more

especially as evaporation is prevented by them in intercepting the sun's rays. Hence trees act in a twofold manner.

In 1719, a destructive flood took place at St. Helena, supposed to have been produced by a water spout breaking over the island. The following is a short summary of the weather at St. Helena in each month. In January some light rain falls, but the pasture lands are dried up. In February sudden and heavy showers frequently occur. In March heavy continued rains prevail, the thermometer in the country being at 72°, in the town at 85°. In April the rains continue, but more light than in March; May is the last autumn month; and June is the first of the winter, in which some light showers fall towards the end. July is the middle of the winter, when all vegetation is stagnated. August is the last and coldest winter month; the thermometer then is 54° in the country, and 68° in the town. September commences the spring. In October sheep-shearing is done at St. Helena; and November and December are the hay-making months, which last process is a perfect anomaly in a tropical climate. On coming from the Cape of Good Hope to this place

in the month of December, we left the peaches quite ripe at the Cape; yet, on our arrival at St. Helena, and even a month after, we found them only half grown. Considering that St. Helena is so much nearer to the equator than the Cape, we were at first surprised; but it is a good instance of the difference of temperature between islands and continents. The peaches and pomegranates do not ripen here until April.

Lightning is a most rare phenomenon at St. Helena; and thunder, I believe, has never been heard. Instances of earthquakes occurring in the island are on record. One took place in 1756, and in June 1780. On the 21st September 1817, one occurred, which it is said was particularly noticed by Napoleon, who thought that the Conqueror, 74, in which he had been, was blown up.

The climate of St. Helena is salubrious; no particular disease being incident to it. The bills of mortality for 1829 present the following deaths;—from fevers ten, from consumption eight, various complaints sixty-one, which together amount to seventy-nine in the population of four thousand, or about one in fifty.

On the Geology of the Island.—I shall merely

observe, that Mr. Robert Searle's museum at James Town contains a fine illustration of it. By great exertion he has a specimen of every part of it. Abundance of salt-water pools are found in different parts of the island, as well as quantities of salt in the caves of the rocks, which are seven or eight hundred feet above the level of the sea. A stream of water rises in the end of Friar's Hill, and descending through a bed of salt in its course, becomes impregnated. Pumice is found at no great distance from Ladder Hill. The presence of this substance is a certain indication that an eruption has taken place since its erection; for as pumice floats on water, it must have been swept away, or borne up to the surface of the sea if it had been formed below it. There are no satisfactory traces of any crater, and we are therefore destitute of any data for reasoning on the date of its origin. The whole of the Atlantic islands are probably of contemporaneous formation, but the presence of such vast quantities of pumice on some of them may be dated subsequent to the deluge. By some persons these islands have been supposed to be the remains of the wreck of the Atlantis of Plato!—a crude and

visionary idea. Theories are like flowers in the garden of knowledge. But St. Helena may be studied geologically to great advantage; the whole island is a singular phenomenon on the face of nature.

The sugar-cane thrives in the island moderately, under the care and attention of the Horticultural society established there.

Wild cats and rabbits are the only native quadrupeds of the island. The silk spider of St. Helena is very handsomely marked and banded. It spreads its web in the warm valleys, and the fibres of the cocoon are so strong as readily to admit of being spun; indeed they might be used as a substitute for silk. Reaumur without any difficulty might have made a pair of gloves from spiders' bags for the Queen of France, but not from their web; for it appears to be the natural silkworm of St. Helena. Cockroaches, those nuisances to ships, are plentiful at St. Helena; and yet, bad as they are, they are more endurable than bugs. Previous to our arrival here in the Chanticleer, we had suffered great inconvenience from the latter, but the cockroaches no sooner made their appearance than the others entirely disappeared. The

fact is that the cockroach preys on them, and leaves no signs or vestige of where they have been; so far it is a most valuable insect. This creature attains a size of two inches in length sometimes, and at night makes as much noise in rustling among papers as mice will do. They are fond of horny substances, and will destroy the bills and toes of birds that are intended to be preserved; they will even attack the toenails of persons in their sleep, thus causing them a very painful sensation. A good way of entrapping them is placing a basin of water in their way; they are soon drowned in it. The cockroach lays a brown oblong egg, which the female carries at her tail, till she finds a secure place to which she can attach it, and this she does by a kind of cement. They have several egg-bags, and I believe, from repeated observations, that they begin to lay early and have more than one brood or progeny at different times. Cockroaches cast their skin.

Sailors have a notion that soy is made from cockroaches, because the Chinese at Canton have a large soy manufactory, and they are particularly solicitous to obtain cockroaches from ships, from which circumstance sailors immedi-

ately conclude that it is for the purpose of making soy from them. Captain William Owen, an officer of the Navy, well known for his scientific attainments, states that the Chinese use cockroaches as bait in their fishing excursions, and that they answer the purpose admirably. I was also informed by him that the infusion of cockroaches is a most powerful antispasmodic, and is useful in tetanus, and that his surgeon in the Eden, Dr. Birnie, had used it with beneficial effect. I am aware that in some warm climates this infusion has been used with advantage; but Dr. Hall has tried it at Maranham, in a case of tetanus, without any beneficial result. At Bermuda it is used as an antispasmodic in the whooping cough, with reputed benefit. Having therefore the direct testimony of Captain Owen, I always kept some strong tincture of cockroaches by me in those climates where tetanus is of common occurrence. Happily, however, I had no cause for trying its effects. In the course of my experiments on the infusion of the cockroach, I could not but notice that common salt and water saturated with the juices of the cockroach had all the odour and some of the flavour and qualities of soy, so

that Jack's notion after all may not be far from the truth.

The sea in the vicinity of St. Helena is celebrated as being infested with sharks. The whole family of sharks are found here ; the blue shark, the dog shark, the hammer-headed shark, the cooper-headed shark, and the mackerel shark, all herd together, hungry for prey. They are awfully voracious, and may be justly considered as the wolf or tiger of the deep. The stomach of this fish commences not far from the mouth, and extends nearly throughout his whole length ; it is in fact an immense bag, and by its loose integuments admits of immense distension. The reader will probably consider this as a necessary prelude to his being informed that an instance of the voracity of this fish has been known here in the fact of an artilleryman, entire, and with his clothes on, being found in the belly of a large shark. Frequent instances of their attacks are known ; only a few days before we arrived, a Newfoundland dog, that had jumped overboard to reach the shore, was bitten fairly into two parts by a shark, which having gulped down one half of the poor animal, in a few moments came and

seized the other. A fisherman's boat was once obliged to take refuge alongside the Chanticleer to escape from the repeated attacks of a huge shark, which neither the blows they gave it with a spar, nor anything they did, could intimidate. The fact was, that there were some fish in the boat, which it was supposed had enticed him, as they were successively hauled out of the water by their lines.

In the structure of the shark we find a considerable prolongation of the upper or dorsal portion of the tail, which performs an important part in the habits of the creature. It inflicts a most powerful stroke, and serves to turn the fish with the utmost rapidity on his back for the purpose of seizing his prey, such being the position of his mouth that he is compelled to do so. The eyeball of the shark revolves on a cartilaginous pedicle, so that its vision is adapted for this retroverted posture in seizing its prey. The heart of the shark is large, the auricle light-coloured, and many hours after death it contracted and leaped powerfully on opening the bowels. The ventricle did not contract as we had expected. Sharks are not rapid swimmers, and have much

difficulty in bad weather in getting off a lee-shore. Vast numbers have been thrown upon Robben Island in Table Bay, and their livers have furnished many tons of oil. In the course of our voyage we lost all Massey's patent logs by the sharks biting off the copper fly.

Plenty of other fish are caught by the fishermen of James Town. The flying-fish are very numerous, and from twenty to twenty-four inches long. The mackerel of St. Helena is apt to produce unpleasant symptoms. Several of the officers on board the Chanticleer were attacked with violent head-ache, suffusion of the face and scarlet rash on the breast, after having eaten of the mackerel; and I am informed that the same symptoms have been experienced in other ships. But there are plenty of other fish for consumption, and among them the coal-fish is much esteemed. The humpbacked and sperm whale frequent the island in July, August, and September. Grampuses are common there, and dolphins are playing at all times in numerous shoals; turtle are caught there from February to June, and are turned by boats while asleep on the surface of the water. They are of an im-

mense size and will weigh as much as five hundred pounds. The method adopted at St. Helena of salting fish is simply that of dipping it in the sea, and allowing it to dry in the sun. This is repeated as often as is considered necessary to preserve it.

The anchorage off James Town, the only one at St. Helena, being on the lee-side of the island, is well sheltered, and of easy access. The surf sometimes is very high, so that no boats can land for several days together. These surfs are most prevalent in the months of January and February, and many lives have been lost in consequence of boats being upset by them. During this time the weather is fine, the wind is light, and there appears to be no obvious cause to produce so extraordinary a phenomenon as these surfs present. They occurred twice during our stay here in the Chanticleer, and have been known to wash persons off the wharf. The spray commonly rises to the height of fifty or sixty feet, produced by a wave from the sea, which at the time appears to be in a perfectly quiescent state. Captain Johnson, the astronomer at St. Helena, has

paid very great attention to the tides there, and has adopted a most convenient and accurate method of observing them. The weak state of the tides and the heavy swells which prevail, render it a matter of some difficulty to obtain any correct results from his observations, and anomalies of every kind make them useless.

Soon after our arrival, Captain Foster not finding James Town a suitable place for conducting his experiments, the Chanticleer was anchored off Lemon Valley, a little to the westward. Here he obtained the use of the guard-room for the pendulum experiments; and the young gentlemen of the Chanticleer were located on the hills in tents, employed in making magnetic observations.

His Majesty's sloop *Espoir* was stationed at St. Helena while we were there, and his Majesty's ship *Eden*, under the command of Captain W. F. W. Owen, arrived from Fernando Po; the *Hecla* also arrived from the coast of Africa. The *Eden* had lately suffered severely, having lost a hundred men from the effects of fever. The *Hecla* had also lost her captain, Commander T. Boteler, and so many of her

officers and crew that she was almost unman-
ned. A more wretched spectacle could not be
imagined than this ship presented on her arri-
val at St. Helena. She was literally a floating
sepulchre from the dreadful effects of the Afri-
can clime.

CHAPTER XVIII.

Sail for Ascension in company with the *Eden*.—Anchor off George Town.—Character of the Island.—Establishment of George Town.—The Green Mountain and the Devil's Riding Ground.—Produce of the Island.—Dampier's Springs.—Turtle, their habits.—Method of taking them.—Male Turtle never obtained.—Insects.

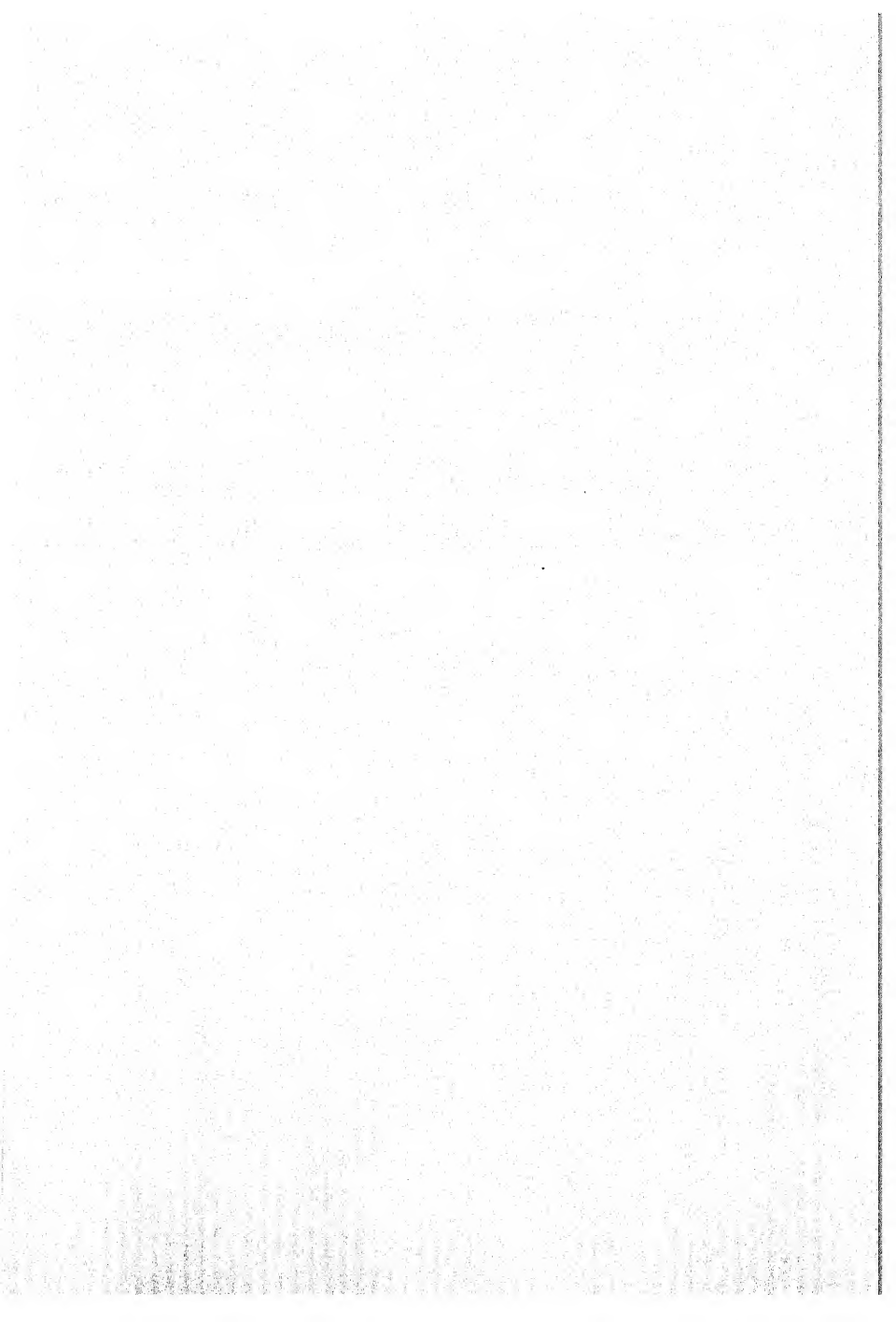
ON 10th of February we left St. Helena, and after a delightful passage of four days we arrived at Ascension on the 14th February, in company with his Majesty's ship *Eden*. The scene from the anchorage has a barren aspect although warmed by the light colour of the sand, but it is by no means so repulsive in the eye of a visitor as the wild and rugged rocks of St. Helena. Ascension is in general a much lower island, interspersed with broken ridges of lava and scattered hills separated by extensive plains. St. Helena, as we have seen, is one towering mass of solid rock.

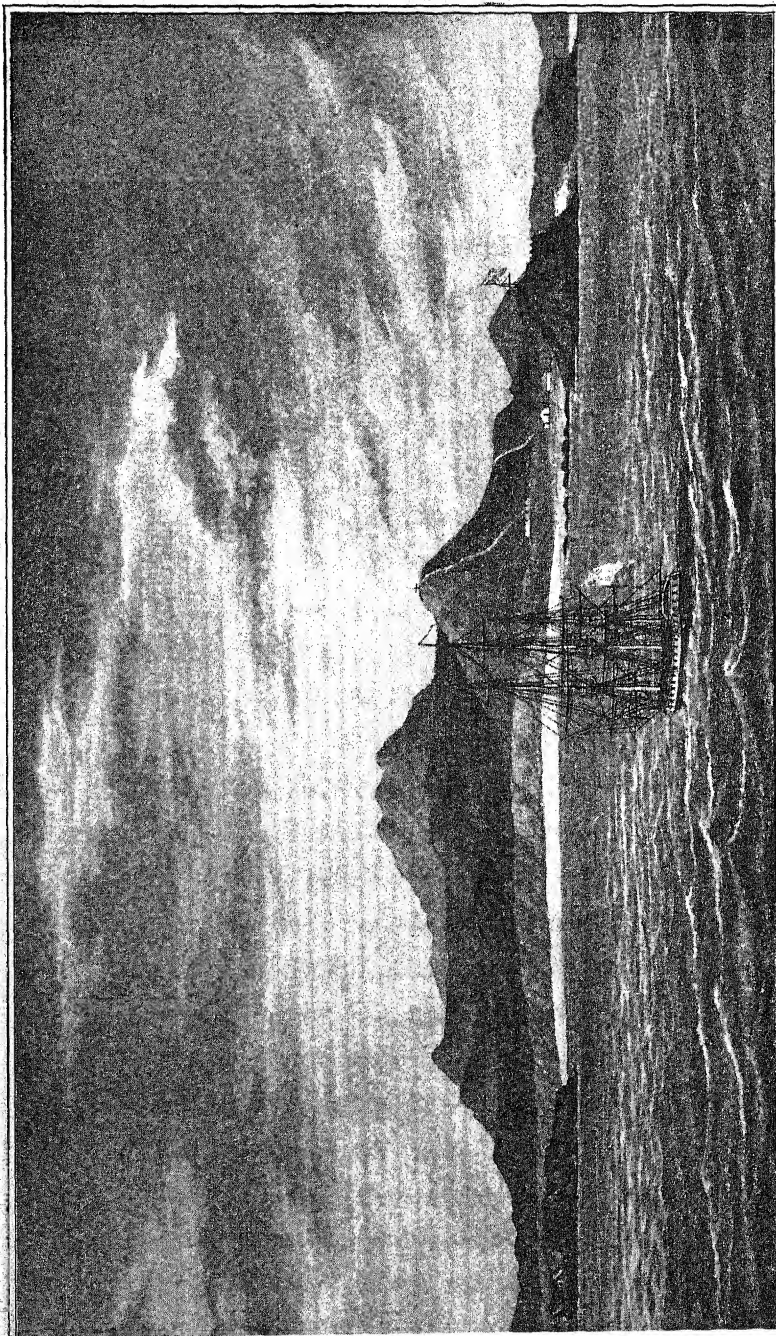
Situated nearly in the middle of the vast Atlantic, Ascension is about twenty miles in circumference, being nine miles in length from east to west, and about five or six from north to south. The surface of the island consists of ridges of naked rock, hills of cinders, and plains of ashes, dust, and lava. The general contour of the hills, and the blending of their different colours, impart a soft and pleasing effect on the mind of the spectator: the blackness of one hill is relieved by the ash-grey tinge of another, and the brick-burnt soil of one cone is contrasted with the pumice, or brown lava, of an adjacent or an opposite one. By this variety and alternation of colour, the monotony which would otherwise prevail is broken, and the scenery in some parts assumes a wild and picturesque character; and though not sublime in barrenness, it may be regarded as an awful wilderness amid the solitude of the ocean.

On the southern or lee-side of the island is the garrison establishment, dignified by the name of George Town, consisting of a small square formed by fifteen or twenty wooden houses. Besides these, contiguous to them, is the government store, a substantial stone build-

ing; a very neat and respectable hospital establishment on a small scale, for the reception of patients from the ships, and for the purpose of supplying them with medicine; a very good smith's shop; a public mess-room, and a row of humble dwellings for the garrison officers. On Cross Hill, close to the anchorage, is a signal-post which communicates with the mountain-house; and Captain Bate, the commandant of the island at the time of our visit, had erected a house for himself on the brow of a hill to the eastward of the garrison. An admirable pier or jetty, terminated by a rock, forms the landing place, on which is a crane for the purpose of loading and unloading boats.

The establishment at George Town consists of a hundred and ten marines, with four lieutenants, a surgeon with his assistant, an agent victualler and fifty negroes, or kroomen, from the coast, all under the command of Captain Bate of the Royal Marines. The garrison comprises many artificers, and the energy and industry of these people is worthy of a better cause; for, although their labours are surprising, the results of them creditable and beneficial, yet I am afraid they can never make the desert smile.





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J. Clark, sculp.

Ascension, Red & Hill, A. C. by C.

They have erected batteries, built houses, made roads, constructed the fine pier above mentioned, excavated tanks, blown up rocks, levelled hills, begun boat harbours, walled in turtle ponds, among other works, under circumstances of no ordinary difficulty. They have formed gardens, have shown the mountain to be capable of cultivation; they have availed themselves of every advantage that Nature has afforded them, they have explored the resources of the island with minute accuracy, and have turned everything to the best purpose. The result is, that a small party may be maintained there comfortably, and afford assistance to vessels in the way of fresh provisions. But it is like a slender reed in the hand. If it be pressed beyond that, if it be overloaded in its establishment, if many persons be allowed to settle on the island, it will wither away under the accumulated pressure; the main object of all the care bestowed on it will be defeated by the supplies it affords being required for its own settlers, leaving nothing for the ships that call there.

Ascension was taken possession of by our government in the year 1815, by a small party under the orders of Lieutenant Cuppage. Al-

though it was taken as an additional means of security against the escape of Napoleon, we have followed the good policy of keeping it, in order that it might not fall into other hands, since his death; for were this not to be the case, and allowing none of the states of the world were to do so, it would quickly become a nest for pirates, ruining all trade that had to pass by it. It is considered that, as a depot for marine stores and provisions, it will be highly beneficial to our merchant vessels, which in case of need may be supplied with every necessary at a low price. This liberality of our government is highly honourable. The anchorage is good and secure, and moorings are laid down. In case of necessity a vessel might be caulked and refitted, and there are no port dues to increase the expense attending it. The situation of it with respect to the African coast, renders it a most desirable place for the ships on that station to refit at, instead of Sierra Leone. In the event of sickness to any extent on board, a vessel might repair to Ascension, as the Montpelier of the African station. No one who reflects for a moment on the dreadful mortality of the African clime, can do otherwise than

wish sincerely that this purpose for Ascension may be fully verified. It is in this light that Ascension should be principally considered, and if limited to this purpose it will do an immensity of good ; whereas, if we force the island into notoriety, and expect from it more than it is capable of, it may absorb all the wealth of Europe and the gold of Africa, but still remain an arid and dreary desert in the midst of the ocean. The supplies for it must be drawn from distant places, they will in consequence be precarious and expensive : all the industry that man can bestow on it will never make it fertile ; for, although he may sow, it is a beneficent Providence alone that can give the increase and send the blessing of the early and the latter rain.

Ascension must only be looked on as a port to refit in ; it affords no recreation or amusement, nor does it yield any fruits or the common necessities of life, and a scanty portion only of very bad water. In fact, such a union of scarcity, dreariness, and privation does it present, that it will often disappoint those who visit it, if they look for what they naturally expect when safely moored from the dangers of

the sea. It was stated to be in contemplation to erect spacious barracks and increase the fortifications; but Ascension must be regarded as one of the most abject dependencies on the bounty and resources of Great Britain.

The hills of Ascension are numerous and of various heights; but the most elevated one is that called the Green Mountain, from the light hue of the verdure on its summit. It is nearly in the centre of the island, and is 2818 feet high, rising as a grateful oasis amidst waste and desolation; for around it is to be found neither verdure, shade, nor shelter, but one entire field of lava. The lofty ridge of the Green Mountain arrests the watery vapours that would pass it, and, supplying George Town by means of pipes, constitutes the chief blessing and riches of the island. It is said also to have twelve hundred acres of land on its summit available for agricultural purposes. There is a good road from George Town to the Green Mountain; the distance to the foot of it being three and a half miles, and to the summit, six. A party of men are usually employed on the Green Mountain in cultivating the land, attend-

ing the tanks, and looking after the live stock. A neat little establishment, called the Mountain House, is at an elevation of 2250 feet, and is romantically situated on the brow of the hill. A little garden is attached to it, backed by a wall of black cinders, through which a stream of cool refreshing water rushes. The view from this place over the whole island is awfully grand; not a vestige of green is to be seen below the favoured mountain; independent of the pleasures of the ride, it is worth the excursion only to obtain a draught of the cool water dripping from the fountain. Various craters of extinguished volcanoes are seen in all directions over the mountain, amounting to about thirty. They vary from one to three hundred feet in height, and are in general circular. One of these, more terrific and rugged in its appearance than the rest, is called the Devil's Riding Ground, being an elevated mound about half a mile in circumference, with a road winding round it to the summit, walled in on the lower side by a ridge of lava. The whole cultivated ground in the island does not exceed twelve hundred acres; and even this, with every possible attention,

yields no abundant harvest, notwithstanding the industry and care of those who are located there.

It has been observed that there is a good road up to the Green Mountain ; but wheeled carriages can only reach the base, and the ascent is by a bridle road, everything being conveyed up on the backs of horses or mules. This is a powerful drawback to the progress of the establishment, and materially increases the expense. The Green Mountain supplies the party at George Town with water, vegetables, fodder for horses, and pasture for a few cows. The water, while we were there, was brought daily from the tanks in carts, and doled out most sparingly. Sweet potatoes are successfully cultivated on the mountain, as well as cabbages, lettuces, potatoes, (indifferent ones,) calaloo, an excellent substitute for spinach, carrots, tomatas, and capsicums. In the dales, here and there, a few bananas have been produced ; and the pineapple, though deficient in flavour. The Cape gooseberry is very abundant on the mountain, and affords the luxury of a tart ; it is the produce of our *physalis edulis*, a species of our winter cherry. The castor oil plant thrives

there, and a crop of Indian corn has been attempted with tolerable success. The residence on the Green Mountain is cool and agreeable, the temperature being generally 12° below that of the plains; but it is not without its disadvantage, being continually enveloped in mist, which renders the habitation damp, but not unhealthy. Goats were at one time very plentiful on the island, but they are now reduced to a small herd, and hunting them forms one of the chief amusements of the island. It is a fatiguing and laborious occupation, and by no means a generally successful one.

The island is infested with rats to a great extent. The inhabitants of the farm-yard are bred with tolerable success at Ascension, and the fowls form a valuable supply for the table. The rest of their fraternity are yet scarce; a dozen of eggs is considered no trifling present, and a pitcher of milk is a luxury which is scarcely to be obtained by a visiter. The Green Mountain abounds with Guinea-fowl, which afford very good amusement to the sportsmen during the season, or from April to September. On the northern side of the mountain is a drip of water called Dampier's springs,

markable that no young ones are ever taken there, and none under the full size. In the proper season, from December to June, they come on shore during the evenings, preferring moonlight for their walk. They crawl up the sandy beaches of the island, and make a large hole by scooping the sand up with their flippers; having deposited their eggs in it, and carefully filled the hole up again with sand, they retreat and take again to the water. If they are surprised in the act of laying their eggs, a person might tickle them without causing any interruption, so intent are they on their occupation. They lay from seventy to eighty eggs at a time, and it is said that they repeat this operation two or three times in the season. The eggs are an inch and a half in diameter, and covered with a soft semi-calcareous shell. The turtle is certainly the most perfect of amphibious animals, and can remain an amazing long time under water without respiring. It has the greatest tenacity of life, and astonishing powers of abstinence, living for two or three months without taking the least particle of food. They are also of remarkable fecundity, and browse on the sea-weeds which float on the surface of the sea

as well as the green membranous fuci at the bottom.

Although the average weight of the turtle is about eight hundred pounds, it often amounts to nine, but when cut up there is not more than one hundred and fifty pounds available meat. So little is it thought of here, that many parts of it are thrown to the pigs, and sometimes even the flippers are so disposed of. It is served in rations to the garrison at the rate of a pound to a man, and very much resembles good young beef and sometimes veal; and it is also very good either in steaks or pies. The fat, which principally lines the back shell, when melted down, forms very good oil for domestic or culinary purposes. The semi-cartilaginous mass which connects the back and belly shell is the celebrated calipee which forms the principal ingredient of turtle soup, being softened down by boiling into a pulp of the consistence of marrow and of a delicious flavour. Our ancestors of old, as well as the present generation, seem to have been quite aware of this, for the poet says :

“ Calipash hinc gustum languentem provocat ; inde
Novum ministrat appetitum calipee.”

The flesh of the turtle is a good and wholesome food of light and easy digestion, keeping the bowels rather lax than otherwise. It is served out to the crews of his Majesty's ships in lieu of fresh beef while they lie at Ascension, but it is frequently refused by some. Merchant vessels touch at the island for the purpose of buying it. The price of one is fifty shillings; but they seldom reach England, the length of the voyage and their bulk being against it. An average season yields four hundred or five hundred turtle, but as many as fifteen hundred have been taken in one. The turtle out of the water is a dull, inanimate animal, hobbling along with its heavy unwieldy carcass. On shore it is very easily captured. The method of doing this at Ascension is by stationing parties on the beach at night to watch their landing. The person then quietly waits till the turtle has deposited her eggs, which being done, he makes for the animal and turns her on her back. In this position turtle are perfectly secure, being entirely helpless, and thus they are allowed to remain till the morning, when they are carried away and deposited in ponds of salt water prepared for the purpose. In these they

will live as long as they are required, and are taken out as they are wanted. The ponds are generally kept well stored.

The West Indian turtle, which is generally seen in England, is a young one of this species, and usually not one third of its size. In the West Indies they are taken at all times of the year in nets, while feeding by the shore or floating in the sea-weed, of which there are immense quantities along the shore of the Spanish Main and the various islands. The flesh of these is finer and more delicate than that of the old ones at Ascension, and the steaks of them are equal to the best veal cutlets. It is some matter of surprise among the residents at Ascension, that they never see anything of the young ones after they quit the island. But the turtle never comes on shore for any other purpose than that of laying eggs, and females are therefore only caught. For the last seven years only one male turtle has been caught at Ascension. It is said that these come on shore to die as they get old, but I see no reason for believing it. The turtle is reputed to be of quick growth, and to attain the full size in eight or nine years. This opinion, however, is grounded

solely on the circumstance of some young ones being pegged in the fin before they took the water, and in eight years afterwards some of the turtles captured had holes in their fins. As a corroboration of this, the middle-sized turtle caught at Cuba are considered to be three years old; but all this is very vague, and quite insufficient to warrant any conclusions as to their growth. The young turtles, as they take the water at Ascension, subsist on the floating weed; while the wind and current drift them along to the Spanish Main and West India Islands, where they find abundance of food spread on the surface of the water for them. This is their natural feeding-ground, and this probably the principal purpose for which the gulf weed is intended. Thus, that which appears to short-sighted man the mere result of casual and fortuitous circumstances, is subservient to the most beneficial purposes by the wisdom of an omnipotent Creator. Not a weed strews the ocean without a design.

The botany of Ascension may be comprised in a very few words, and it is by no means of sufficient interest to notice here. The cinder caves of the island are prettily decorated with

ferns, and my attention was attracted by one creeping on the soil. The agricultural products were noticed in our observations on Green Mountain.

The insect tribe of Ascension are more attractive from their annoyance than any beauty they possess. In fact, the residents almost consider themselves as labouring under some of the plagues of Egypt in the swarms of flies by which they are annoyed. These are so numerous that they literally blacken the table-cloth at meal-times. Ants are beyond all number, mosquitoes plentiful as they are tormenting, scorpions, centipedes, large spiders and crickets, in ample quantity, and the only insect attractive on account of its beauty is the mountain butterfly.

Of birds, Ascension possesses none but the sea-fowl that frequent its shores; although an importation of crows was expected from England, with a view to destroy with them the grubs which frequently eat the seeds that may have been sown. The poor crows would have had to lament the absence of trees to roost on.

Shells are with difficulty obtained perfect; yet, from the vestiges of them found on the

beach, there appear to be many species. The oysters are very curiously constructed, and are found adhering in clusters. The oyster is of a green colour, and is said to be good when curried. Those taken above high-water mark are liable to produce injurious effects on some individuals. The shores of Ascension abound with fish, among which the congers hold a respectable station, not only supplying the tables, but leaving a surplus for exportation. Although called congers, they do not belong to the eel tribe of naturalists, but are referable to a distinct genus, from their having no pectoral fins.

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END OF THE FIRST VOLUME.

